DOCUMENT RESUME

ED 213 247 FL 012 302

AUTHOR Faerch, Claus; Kasper, Gabriele
TITLE Processes and Strategies in Foreign Language Learning and Communication.
PUB DATE 80
NOTE 73p.
JOURNAL CIT Interlanguage Studies Bulletin Utrecht; v5 n1 p47-118 1980

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Communicative Competence (Languages); *Interlanguage; Language Processing; *Learning Processes; Psycholinguistics; *Second Language Learning

ABSTRACT

The approach adopted can be characterized with respect to three types of problems in interlanguage studies: the choice of perspective, the relationship between learning and communication, and the ontological status of classes of interlanguage phenomena. This description of processes and strategies is based on the learner's viewpoint. Strategies are considered as a subclass of plans and are defined by means of two criteria: problem orientedness and consciousness. The criterion of problem orientedness implies that the learner is having a problem in reaching a particular learning or communicative goal. The criterion of consciousness implies that the learner is consciously aware of such a problem. Strategies are defined as potentially conscious plans for solving what presents itself as a problem in reaching a particular goal. Learners may attempt to solve problems in second language learning by means of psycholinguistic strategies (adopted if the problem is in hypothesis formation) or behavioral learning strategies (if the problem is in hypothesis testing or in increasing automatization). Communication strategies are used to solve problems in the planning or the realization of speech production. They may be subclassified into formal reduction, functional reduction, and achievement strategies. Pedagogical issues relating to learning/communication processes and strategies are discussed. (Author/JK)

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Utrecht State Univ., The Netherlands
Interlanguage Studies Bulletin Utrecht
v5 n1 p47-118 1980

ED213247

PROCESSES AND STRATEGIES IN FOREIGN LANGUAGE LEARNING AND COMMUNICATION*

Claus Færch
PIF Project
University of Copenhagen
and
Gabriele Kasper
Seminar für Sprachlehrforschung
Ruhr - Universität Bochum

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1. Introduction

How do people learn a further language once they have acquired a first one? How do people communicate by means of that language? These have been central questions for second language acquisition researchers, pidginists and creolists, language planners, designers of courses and materials for the teaching of a second or foreign language, and for second and foreign language teachers. Attempts to answer these questions have been forwarded in terms of various "theories" and hypotheses (cf. Bausch/Kasper 1979) which are largely determined by their authors' conception of language, language learning, and communication in general.

Ever since the paradigm shift from behaviourist to cognitivist views of how languages are learned and used, researchers have taken an increasing interest in the processes which take place in the learner's mind when she learns a second or foreign language and tries to communicate in that language. Moreover, the conception of the learner as actively and creatively involved in these processes has directed researchers' attention to the devices learners make use of in second or foreign language learning and communication, and they have referred to these devices as strategies. It

*We would like to thank the participants at the colloquium on communication strategies, arranged by the PIF Project, University of Copenhagen, in August 1979 for a profitable discussion of some major aspects of the present article. Special thanks are due to K.-Richard Bausch, Craig Chaudron, Willis Edmondson, Rüdiger Grotjahn, Robert Phillipson, Horst Raabe, Mike Sharwood Smith and Elaine Tarone, who took the trouble to comment on an early draft and who suggested considerable changes and revisions. We have made use of many of these suggestions in finishing the article which, needless to say, does not reduce our responsibility for the final product.

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has become widely recognized that processes and strategies in learning and communication will be constitutive components of any theory of second language acquisition, as was particularly emphasized in Selinker's programmatic article on "Interlanguage" (IL) (1972). In this he distinguished between "five central processes" which contribute to the formation of ILs, two of them being "strategies of second language learning" and "strategies of second language communication".

A better understanding of processes and strategies in second and foreign language learning and communication will be highly relevant for all concerned with second or foreign language teaching: deeper insights into the processes involved in second or foreign language learning and communication and into the strategies learners use in coping with learning or communication tasks will enable us to set up more reasonable learning objectives and to devise more adequate methodologies for second or foreign language learning in the classroom.

Unfortunately, the terms "learning process", "learning strategy", "communication process", and "communication strategy" are far from well-defined, and different authors seem to refer by them to quite different concepts, as we will illustrate presently. We shall therefore try to establish a theoretical framework by means of which processes and strategies can be more precisely defined and identified. By utilizing this framework, we set up a taxonomy of learning and communication strategies which, we hope, will be useful in future theoretical and empirical IL research.

1.1 Types of L2 learning

It seems to us a disadvantage of some of the previous studies of learning and communication processes/strategies in interlanguage studies (ILS) that one is sometimes left in doubt as regards the precise type of language learning in which they function, i.e. one does not always know whether the author refers to a second language (SL) or a foreign language (FL), to "acquisition" or "learning", to informal or formal acquisition/learning contexts, or whether she refers to a purportedly "neutral" type of L2 learning (see e.g. Tarone/Frauenfelder/Selinker 1976, Kleinmann 1977, Tarone 1979).

Our interest in learning and communication processes/strategies is ultimately motivated by our aiming at a reasoned improvement of FL teaching or, to be more precise, the improvement of FL learning under classroom conditions. However, a restriction to this particular learning context seems to be inadequate for various reasons:

- The structure of the classroom as a learning and communication setting differs in quality from other learning and communication

environments (Hüllen 1976; Krashen 1976; Edmondson 1978; Felix 1977). Confining our attention to this type of setting therefore allows for immanent changes only: it precludes the possibility of introducing or trying out procedures which have proved to be successful in informal contexts.

- As learners ultimately learn a FL to be able to use it outside the classroom, we have to know how IL communication functions in informal contexts in order to prepare the learner appropriately for such communication.

- Even in FL learning contexts, some informal acquisition/learning very often takes place through the mass media, contact with native speakers of FL etc. If the learner is to profit as much as possible from both formal and informal learning contexts, then FL teaching has to integrate the learner's FL experience from outside the classroom and help facilitate FL learning and communication in informal environments. This again presupposes that we know how FL learning and communication function outside the classroom.

The heuristic procedure we adopt in this article is therefore to set out from a context which is neutral between FL learning and FL acquisition, and for which we use the term "L2 learning". This will enable us to set up exhaustive taxonomies of IL learning and communication processes/strategies discovered so far. It will then be a matter of future empirical research to establish which of these processes/strategies are universal and which are specific to certain learning and communication contexts, and furthermore, which are more successful under what learning and communication conditions.

1.2 Outline

We can now give an outline of the article. In 2 we discuss various approaches to the description of processes and strategies in L2 learning and communication, which prepares the ground for our own general discussion of processes and strategies in 3. In 4, the general characterization of processes and strategies is then applied to L2 learning and in 5 to IL communication. The interrelationship between learning and communication strategies is the topic of 6, which leads up to a general discussion of pedagogical issues relating to learning/communication processes and strategies (7).

2. Approaches to describing processes/strategies

In this chapter, we shall comment on how three problems in IL studies which are relevant to a description of processes/strategies have been treated in the literature, and show that some of the conceptual and terminological confusion one comes across is at least

partly due to the different ways in which these problems have been handled by various authors. On the basis of this criticism, we shall clarify our own position as regards these three problems.

2.1 Choice of perspective

Some confusion has arisen because researchers have not always made it clear whether IL descriptions relate to the analyst's or to the language user's point of view. Thus in the literature on simplification, interlanguage is sometimes characterized as being a result of a simplification strategy/process (Widdowson 1977, Richards 1975, Selinker/Swain/Dumas 1975, Fathman 1977), whereas what is perhaps really meant is that the language user's language to the interlanguage analyst represents a simplified code of the target language (Corder 1977). Levenston and Blum (1977:52) apparently take account of these two possible perspectives when they distinguish between simplification as a characterization of the linguistic product and simplification as a process/strategy.

In order for a description of L2 learning and IL communication to have explanatory power, the relevant units to be analyzed must be psycholinguistic, i.e. the researcher has to take the learner's perspective in finding out about the mental processes/strategies in learning and communication, rather than take the analyst's perspective, which means focussing on the linguistic product.

By taking the learner's perspective, we do not wish to imply that the learner has a clear or even "scientific" idea of what she does in learning a L2 and communicating in an IL. Obviously, the learner's notions of her learning and communicative activities are often distorted, naïve, or she has no conscious access to them at all. As Rehbein suggests in connection with an analysis of action: "If a content analysis of the term 'action' is meant to provide a systematic analysis of what everyday interactants understand by it, then this does not imply that such a systematic analysis is already available to everyday interactants. The opposite is the case" (1977: 3)[1]. It is therefore the researcher's task to reconstruct what goes on in the interactants' minds by giving an explicit scientific account of their implicit (or explicit) common sense knowledge. If we transpose this to the present context, we can say that adopting the learner's perspective means reconstructing the mental processes which lie behind the learner's observable behaviour in L2 learning and IL communication.[2]

We consequently suggest that IL researchers in their terminology observe a systematic distinction between dynamic (verbal) and static nouns so that verbal nouns like complexification, simplification and overgeneralization are exclusively used with reference to processes/strategies, and static nouns like complexity and simplicity are used whenever reference is made to product level descriptions.

2.2 Learning and communication

Another obviously relevant distinction which is not always observed in the literature is the one between learning and communication. Selinker, Swain and Dumas (1975), to give but one example, investigate what they refer to as learning strategies (overgeneralization, simplification, L1-transfer) by using communicative tasks (picture story telling, interviews). It is not clear how one can infer from learners' linguistic behaviour on such tasks to how they learn L2. Rather, such tasks provide data about learners' activities in IL communication. (See also Bialystok/Fröhlich (1977) for a similar confusion of learning and communication strategies.)

The reason why learning is not kept distinct from communication in some IL studies is of course that especially in informal L2 learning contexts, learning takes place through communication, and one particular act of verbal behaviour can have both learning and communicative functions for the L2 learner. Whether learning and communication occur simultaneously - as in L1 and SL acquisition - or consecutively - as is often the case in formal FL learning settings - is however irrelevant for the distinction in function between these two areas, which can be roughly characterized as follows: Learning L2 refers to the processes whereby the learner discovers the (pragmatic, semantic, syntactic, phonological) rules of L2, and gradually comes to master them, thereby developing a discrete IL system. Communicating in IL refers to the ways the learner uses her IL system in interaction. In the present article, we first deal with processes/strategies in each of the two areas in turn (4,5) and then discuss the relationship between them (6).

2.3 Defining criteria

A third, and perhaps the most important, reason for the unsatisfactory conceptual and terminological situation in studies of IL processes/strategies is that the terms "processes" and "strategies" are often used in an apparently arbitrary, non-defined way (see Brown 1976:136 for the same criticism), as can be seen from the following quotes: "'Simplification' is understood as the act of simplifying, the strategy of communication, the process whereby specific meanings are communicated on specific occasions" (Levenston/Blum 1977:52); "the learning strategy to reduce speech to a simpler system seems to be employed by every learner. (...) both the native child and the second language learner use a developmental process of speech reduction" (Jain 1974:190f); "... overgeneralization and transfer learning strategies appear to be two distinctly different linguistic manifestations of one psychological process" (Taylor 1975b:87); "simplification may be the result of a learning strategy or process ..." (Corder 1977:12; all italics ours).

While the above quotes illustrate confusion in the use of the terms strategy and process, some authors use the term strategy when they in fact seem to refer to linguistic rules, cf. "The learner apparently constructs hypotheses about the target language based on knowledge he already has about his own language. If the constructions are similar in the learner's mind, he will transfer his native language strategy to the target language" (Schachter 1974:212). As will be clear from the discussion of strategies and rules below (4), it is important to maintain a distinction between strategies and rules. This has also been emphasized by Adjemian, who makes the point that "learning strategies are cognitive activities of a different kind than linguistic rules. Learning strategies are crucially concerned in the acquisition of a language system. Linguistic rules are crucially concerned in the actual form of a linguistic system" (1976:303, see also Færch 1979a:62f.).

The shortcoming in the use of the terms "process" and "strategy" in the preceding quotes is that they lack clear definitions. In some other studies, authors have taken care to use non-arbitrary terms by setting up defining criteria for processes and strategies. Blum and Levenston, for instance, in a later study use the temporal dimension as a defining criterion, suggesting that strategy refers to "the way the learner arrives at a certain usage at a specific point in time", process being used with reference to "the systematic series of steps by which the learner arrives at the same usage over time" (1978a:402). Frauenfelder and Porquier (1979) distinguish processes from strategies according to their universality/optionality, processes being universal, strategies optional mechanisms employed by individual L2 learners.

Meaningful as these defining criteria may be, their choice seems to us nonetheless rather arbitrary, as it is difficult to argue for their relative validity on any "objective" grounds. The general problem we are faced with here is how decisions relating to the categorization of reality and to the establishment of defining criteria for such categories can be rationally motivated. Unfortunately, metatheoretical issues of this kind have not been given much thought in IL studies. The presupposition behind the approaches taken by the cited authors is probably the one reflected in Selinker's statement that "little is known in psychology about what constitutes a strategy, and a viable definition of it does not seem possible at present" (1972: 219), namely that the category of strategies is given a priori and the task for researchers is one of developing adequate descriptions of this category. We would argue that while there are certainly classes of objects in reality which can be unarbitrarily distinguished from each other (eg elephants from strategies), there are other phenomena whose categorical separation is much less obvious (eg processes from strategies, see above). For the scientific description of such phenomena, we consider the theoretical position taken by the early Habermas as most adequate. In discussing

the relationship between knowledge and human interests (1971), he argues against "the basic ontological assumption of a structure of the world independent of the knower" and against "the objectivism of the sciences, for which the world appears objectively as a universe of facts whose lawlike connection can be grasped descriptively" (304). Habermas emphasizes that "fundamental methodological decisions ... have the singular character of being neither arbitrary nor compelling. They prove appropriate or inappropriate"[4] (312), i.e. they are, in the final analysis, located in the researcher's "Erkenntnisinteresse". As we pointed out earlier, our ultimate interest in dealing with IL processes/strategies is the improvement of FL learning/teaching. The criteria we adopt for the definition of these categories will therefore have to be legitimized out of this "Erkenntnisinteresse". This will be the content of the following chapter.

3. Defining "strategies"

The procedure we adopt in defining strategies is to localize them in a general model of intellectual behaviour (cf. 3.2. below), in which their function can be explained through their relationship to "processes" and "plans". The category "strategy" will be shown as being relevant for FL learning/teaching, and criteria for its definition will be developed out of our Erkenntnisinteresse in this area.

3.1 Processes, plans and strategies

Process is frequently used in a general sense in which it is primarily opposed to (linguistic) product. This use of the term is particularly clear in articles arguing for the relevance of "process descriptions", rather than "product descriptions", of language learning/acquisition (e.g. Dulay/Burt 1974). Brown defined "process" in this general sense as "continuing development involving a number of changes" (1976:136), a definition not far from that given by Klaus and Buhr (1976), who define a process as "a dynamic sequence of different states of an object or system"[5] (990). It is this general sense of process which lies at the back of such otherwise disparate expressions as "the process of L2 acquisition" (Brown 1976:136), "the communication process", "restructuring and recreation processes" (Corder 1978a:75-76).

Process in this general sense seems to us indeed an indispensable category in IL studies, and we shall use the term in this article as defined in the above quotes.

The issue becomes more problematic, however, if process is used in connection with strategy in the way it is often the case in the literature, i.e. either as being interchangeable with

strategy or, in the more specific sense of "non-strategic process", as opposed to "strategic process" (= strategy) (cf. the literature cited in 2.3).

In our opinion, the basic assumption behind these attempts at defining strategies is rather questionable, namely that strategies constitute a special class of processes. By looking at the phenomena which are normally characterized as learning or communication strategies in the literature, it is evident that these can more precisely be characterised as "plans": entities which "control the order in which a sequence of operations is to be performed" (Miller/Galanter/Pribram 1960:16), ways of controlling processes (see also Rehbein 1977:146ff, Sharwood Smith 1979, and Klaus/Buhr 1976, in which "strategy" is subsumed under "plan"). To quote the analogy mentioned by Miller, Galanter and Pribram, "a plan is, for an organism, essentially the same as a program for a computer" (1960:16).

By treating strategies as plans rather than processes we can specify our task of defining strategies as one of answering the questions (1) what is a plan, and how does it relate to processes? (2) how do strategies relate to plans?

3.2 Plans and processes

To illustrate the function of plans and the relationship between plans and processes, we set up a general model of the principles behind goal-related intellectual behaviour, represented in fig. 1 below. The notion "intellectual behaviour" ("intellektuelles Verhalten") is borrowed from Leont'ev (1975:153), who uses it in contradistinction to "reflectory behaviour" ("reflektorisches Verhalten"). "Reflectory behaviour" refers to a fixed connection between a stimulus and a reflectory response which is either genetically determined or learned, whereas there is no such fixed connection in the case of intellectual behaviour: rather, the individual has to choose (more or less consciously) between various alternative responses to a given stimulus in constructing "models of the future" ("Modelle des Künftigen") on the basis of "models of the past and present" ("Modelle des Bisherigen"). We shall use the term "intellectual behaviour" in a broader sense, namely as referring to all those psychic and behavioural (observable) actions which involve cognitive processes. Intellectual behaviour thus includes the phenomena which we are interested in, i.e. language learning and verbal communication.

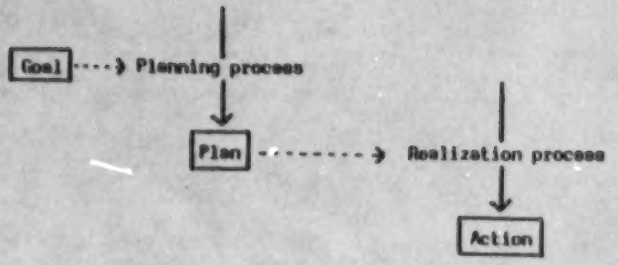

fig. 1: Planning and realization of intellectual behaviour

The model divides into two phases: a planning phase, comprising "goal", "planning process" and "plan", and a realization phase, which comprises "plan", "realization process" and "action".

The aim of the planning phase is to develop a plan, the execution of which will result in an action which will lead to the actional goal. In order for the plan to match the goal, the individual has to base the construction or selection of a plan on an analysis of the given situation and its resources with regard to the goal. Leont'ev characterises the first phase in intellectual behaviour as comprising "the orientation about the situation and the conditions of the task" ("die Orientierung über Situation und Bedingungen der Aufgabe") which leads to the "selection of the plan of action" ("Auswahl des Handlungsplans", 1975:153). The "assessment of the situational conditions" ("Einschätzung") also constitutes the first of Rehbein's seven "phases of the process of action" ("Stadien des Handlungsprozesses", 1977:141ff).

As regards the structure of plans, Miller, Galanter and Pribram assume them to be hierarchically organized (1960:16f), which can be exemplified by the division into pragmatic, semantic, syntactic and phonological elements of plans aimed at verbal behaviour. This hierarchical organization of plans is of some interest in relation to strategies, a point which will be further discussed below (3.4.2.).

In the relevant literature, one often finds that no distinction is made between the planning process and the plan itself. Thus Leont'ev says that "the programme [= plan] is ... nothing given, readymade, but a process, the process of programming"[6] (1975:216), and Miller, Galanter and Pribram refer to a plan as a "hierarchical process" (1960:16). Although a distinction is arbitrary, as we are

dealing with psychological constructs which have not been given any neurological support, we find that it is convenient to maintain a distinction between the planning process, which is sensitive to what type of goal has been selected and to the analysis of the situation, and the plan itself, which is what controls the realization phase. In so doing, we follow Rehbein, who explicitly distinguishes between the planning process and the plan as its result (1977:146ff).

By characterizing a plan as "nothing given, readymade", Leont'ev implies that plans are being constructed by the individual in generating speech. Miller, Galanter and Pribram (1960, especially 177ff) and Rehbein (1977:146), however, distinguish between readymade, automatic plans which the individual can choose among, and plans which are specifically formed by the individual in a particular situation. Moreover, it is a matter of controversy to what extent the realization process, i.e. the conversion of a plan into action, can take place without the existence of plans: according to Miller, Galanter and Pribram, this is not assumed to be the case, whereas Leont'ev (1975:153, 194f) and Rehbein (1977:147) draw a clear distinction between "unplanned" and "planned" communicative behaviour. Interesting though this question is, it is beyond the scope of the present article to engage in any further discussion of it, in particular as it is of no serious consequence for our treatment of learning and communication strategies whichever stand we take. In the following, we adopt what we consider the stronger claim as seen from a cognitivist view and consider all intellectual processes to be planned by either readymade, automatic plans or by plans constructed ad hoc, as described immediately above.

For verbal behaviour, the strong claim implies that in order to reach a learning or communicative goal, the learner/language user sets up a plan on the basis of her linguistic system(s) (and her assessment of situational factors) and selects the rules/items from her system which are to go into the plan. We assume that this planning process and the realization of the plan as its product is implied in common notions like "rule application" or "using one's linguistic system", and we shall use these notions for the sake of brevity as just described.

3.3 Plans and strategies

We mentioned in 3.1 that we consider strategies to be plans, rather than processes, and in 3.2 we set up a general model for goal-related intellectual behaviour, demonstrating how plans are assumed to function within the two phases of the model: planning and realization. What now remains to be done is describe what characterizes those plans to which we want to refer by the term strategy.

Before we proceed to doing this, it should be repeated that we do not consider strategies to form a "given" class (cf. 2.3.). Plans can be characterized by numerous criteria and consequently divided into subgroups in a variety of ways. If we do not want to establish a more or less arbitrary subgroup of plans we have to base our defining criteria on our "Erkenntnisinteresse". This, in the context of the present article, means relating the defining criteria to what is of relevance to FL learning/teaching.

Basing the defining criteria for strategies on one specific type of L2 learning, namely FL learning, is not meant to imply that the definition of strategies holds true for that context only: strategies as defined in the present article can no doubt be found in a multitude of learning and communication situations. But the approach we adopt implies that the subgroups of plans we establish as strategies is not necessarily a relevant subgroup in contexts other than that of FL learning/teaching.

Our defining criteria relate to the learner and not to her observable behaviour (cf. the discussion of "mental reconstruction" above, 2.1.). It is often difficult, on the basis of a certain instance of behaviour (eg (part of) an utterance in a sample of learner language) to decide to what extent the plan which underlies the behaviour satisfies the defining criteria for strategies. The main reason for this is that there is no one-to-one correspondence between plans which satisfy the defining criteria (and which are therefore "strategies") and behaviour: strategies may bring about exactly the same instances of behaviour as may "non-strategic" plans. Some types of behaviour, as eg the use of gestures and sound imitation in communication, or the use of "behavioural" learning strategies (cf. 4.4. below) are indeed more likely to be the result of "strategies" rather than "plans", just as communicative behaviour which is affected by strategies may contain "traces" of the defining criteria (or "strategy markers", eg hesitations, laughs, etc., cf. Færch/Kasper 1980). But in numerous cases it is impossible to decide in a non-arbitrary way whether the defining criteria for strategies were satisfied or not at the moment of production.

3.4 Strategies

In the preceding paragraphs we characterized strategies as plans which satisfy certain, as yet unspecified, criteria. These criteria are a criterion of problem-orientedness and a criterion of consciousness. The criterion of consciousness is derived from the criterion of problem-orientedness and can consequently be considered a "secondary" criterion. The two criteria are discussed in 3.4.1., which represents our attempt at defining strategies.

Our criterion of consciousness differs from the way consciousness has been used in a number of previous studies (eg Tarone 1977) in that it is not taken by us to hold directly for the strategy itself but rather for the situation in which the strategy is used. In 3.4.2., we discuss this and a number of related issues having to do with consciousness.

3.4.1 Problem-orientedness and consciousness

In 3.2. we described plans as being inherently goal-related, without discussing the nature of goals. Our "primary" defining criterion for strategies, problem-orientedness, presupposes a distinction between goals which the individual experiences no difficulty in reaching and goals which present themselves to the individual as "problems": only plans that relate to the latter type of goals will be considered strategies.

The word "problem" is sometimes used in a rather vague way as a near-synonym to "task". This is not in accordance with our usage of the word, which corresponds to the definition given by Klaus and Buhr, who define problem as "recognition by an individual ... of the insufficiency of her ... existing knowledge to reach a ... goal and of the consequent need for expanding this knowledge"[8] (1976:974). If the individual experiences a problem in reaching a goal, this implies that the learner is conscious about there being a difficulty. Hence the derived, secondary status of consciousness as a defining criterion of strategies.

Returning to the general model (fig. 1), we can establish two situations for the occurrence of strategies, depending on whether the problem is a problem in the planning phase or in the realization phase. In the first case, the individual experiences a problem in constructing a plan which she considers an adequate means for reaching her goal. In the second case, the problem crops up when the individual attempts to perform the plan.

If strategies are to be devised in order to reach goals whose attainment is seen as a problem, then individuals have to mentally anticipate these goals as results of their action. According to Marxist anthropology, the capability of mental anticipation constitutes a specifically human quality.[9] This idea has been taken up by Schmidt and Harnisch, who maintain that "action plans or strategies are the expression of the specifically human capability to mentally anticipate the results of an action and to act consciously and systematically in order to reach a goal" (1975).[10]

Decisions as to how to achieve these goals are non-arbitrary: individuals try to realize them in as efficient a way as possible, i.e. they use what seems to them to be the most efficient means relative to a given end. Obviously, what they conceive of as being

most efficient might turn out not to have been the optimal procedure, and it might even be the case that the achieved result does not correspond to the intended goal. It follows therefore that efficiency, like our defining criteria, refers to the speaker's/learner's, and not to the analyst's, perspective. The assumed efficiency of an ends-means-relation as a crucial feature of strategies has also been suggested by Schmidt and Harnisch (1975)[11] and by K. Wagner (1977)[12].

Using problem-orientedness as a defining criterion has been done by both Kellerman and Jordens in their respective descriptions of strategies: Kellerman defines a strategy as "a well-organized approach to a problem" (1977:93), and Jordens makes the point that "strategies can only be applied when something is acknowledged as problematic" (1977:14), which points to the additional criterion of consciousness. Neither Kellerman nor Jordens, however, argue for their defining criteria relative to a given "Erkenntnisinteresse".

As we pointed out above (3.3.), our defining criteria for strategies relate to what is of relevance to FL learning/teaching. It is obviously important that learners not only achieve a (partial) communicative competence in the FL but also that they become competent in reaching learning and communication goals which they experience problems in reaching ("learning how to learn" and learning how to communicate in situations/about topics which differ from what characterises classroom communication). One prerequisite for this is that learners are conscious about the existence of learning and communication problems, as this creates the necessary motivational basis for learning how to set about solving such problems by means of strategies. Another prerequisite is clearly that learners are aware of the ends-means relationship of using strategies and that they become conscious of the various ways in which strategies can be employed. The pedagogical aspects of learning and communication strategies as defined in the present article are further discussed in 7.2. and 7.3.

3.4.2 Consciousness

As we pointed out in 3.4., our criterion of consciousness differs from the way consciousness has been used by some other IL researchers as a means of characterizing strategies. Thus Váradi (1973), Kleinmann (1977) and Tarone (1977) all characterized strategies as being consciously employed by the language user which, formulated within our general model, is the same as saying that it is the plan which the individual is conscious about.

Although it is no doubt the case that plans can be consciously developed and employed, we do not want to adopt this as a defining criterion for strategies. First of all, consciousness, as applied to plans is perhaps more a matter of degree than of either-or, as is

apparent from Tarone/Frauenfelder/Selinker (1976), who distinguish between "more 'conscious'" and "more 'unconscious'" strategies (see also Tarone 1979 for a similar point). This, to some extent, may be related to the hierarchical organization of plans (cf. 3.2.): it is probably the exception, rather than the rule, that consciousness refers to a complete plan: in most cases, certain elements only in the plan will be consciously selected, eg (in connection with communicative plans) "high-level elements" like vocabulary (Jordens 1977:16) or pragmatic, semantic and syntactic, rather than articulatory, features (Leont'ev 1975: 195ff).

Second, consciousness is clearly not a constant holding for specific types of plans (or parts of plans) across all individuals. As pointed out by Sharwood Smith, "different individuals may be more or less able to become aware of their own internal mental operations" (1979), which represents a consciousness-raising process. Furthermore, the opposite situation can also be envisaged: individuals may automatize what was at one stage consciously employed plans. This points to the following theoretically possible classification of plans:

(1) plans which are always consciously employed

(2) plans which are never consciously employed

(3) plans which to some language users and/or in some situations may be consciously used and which to other language users and/or in other situations are used unconsciously.

If such a classification could be given empirical support, this would be highly interesting from the view of FL learning/teaching, as this covers the areas of consciousness raising and automatization, which have clear implications for the choice of teaching methods.[13] Also, the issue of consciousness as relating to plans is of considerable interest to IL researchers as it delimits the subgroup of plans which can be characterized by means of introspective techniques (viz. the strategies) from other types of plans, the existence and nature of which can only be inferred from behavioural data or neurological investigations. However, using consciousness relating to plans as a defining criterion of strategies at the present state of ignorance would be rather vacuous, for which reason we shall keep the question open by characterising strategies as potentially conscious plans. By adding together what we have said about strategies in the present chapter we can now say that a strategy is a potentially conscious plan for solving what to the individual presents itself as a problem in reaching a particular goal.

4. Processes and strategies in L2 learning

4.1 Language learning and types of intellectual behaviour

In the introductory chapter, we mentioned the paradigm shift from behaviourist to cognitivist views of language learning. Basic to the cognitivist view is the assumption that the learner is actively and creatively involved in the learning process which, following a general Piagetian model of developmental psychology, can be characterized as a process of assimilation and accommodation.

Although the "creative" aspect of rule formation is of central relevance to the cognitive paradigm of language learning, recent research has paid more and more attention to ways in which the cognitive processes of language learning are interrelated with aspects of the learning situation, eg what the impact of linguistic input is on language learning (see, eg, Hatch 1974), and how learners try out their hypotheses about the L2 and obtain feedback (see, eg, Vigil/Oller 1976). It is no doubt because of these links between language learning and communicative behaviour that a distinction between learning and communication is not always maintained in the literature, as observed above (2.2.).

Another, obviously very important aspect of language learning in addition to rule formation is rule automatization: the learner not only has to learn new rules but also to develop her ability to use these rules, more or less automatically, in communication. This aspect of language learning has often been totally neglected by researchers holding a dogmatically cognitivist view of language learning, as opposed to a number of Soviet researchers working in a framework of "Sprechtätigkeit" theory (eg Gal'perin 1957, Leont'ev 1971), who observe a distinction between cognitivist and behaviourist components of language learning in their studies.

If we apply the general model of goal-related intellectual behaviour (cf. 3.2. above) to L2 learning, we can distinguish between the following two situations: (1) the realization process is a behavioural activity; (2) the realization process is a psycholinguistic activity. In either case, the goal represents some aspect of language learning and is consequently psycholinguistic (see however the general discussion of behavioural strategies in 4.3. for a modification of this).

The first situation can be illustrated by an example from hypothesis testing (cf. fig. 2; see also 4.2.3.). The learner has established a hypothetical rule R_p and wants to try it out. This constitutes the goal. The learner has to develop a plan for how to test the hypothesis, which represents the planning process and the plan itself. The plan may be to appeal directly to some authority (native speaker/reference books) for confirmation or to apply the rule tentatively in communication (productively/

receptively). This represents the realization process. The product of this process is the establishment of R_h as a "fixed" rule in the IL or, in the case of negative feedback, the deletion of the rule from the learner's IL system. This represents the answer to the question raised under the goal.

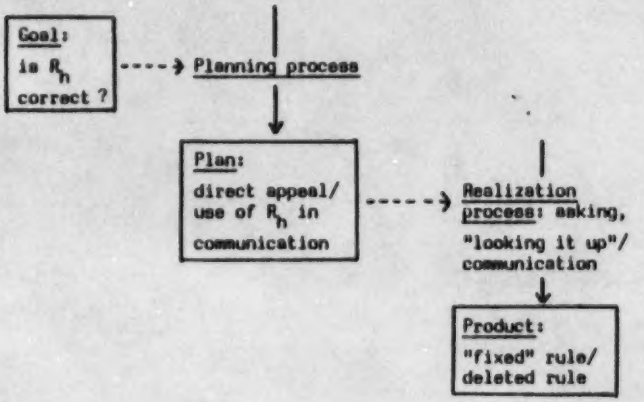

Fig. 2: Example from L2 learning (hypothesis testing) with behavioural realization process

To illustrate the situation in which the realization process involves the learner in psycholinguistic, rather than behavioural, activity we give the following example. The learner wants to find out how to refer to future events in L2. This represents the goal. In order to do so, the learner has to develop a plan for how to establish a rule. In some (mainly formal) learning situations, this could be achieved through behavioural activity such as "looking it up". We assume that this possibility is not open to the learner, for which reason she has to develop a plan which can lead to the establishment of a (hypothetical) rule. This could be to induce the rule from input data.

Inducing the rule would then represent the realization process leading to the establishment of the hypothetical rule R_h in the IL system (the product of the process). This is illustrated in fig. 3.

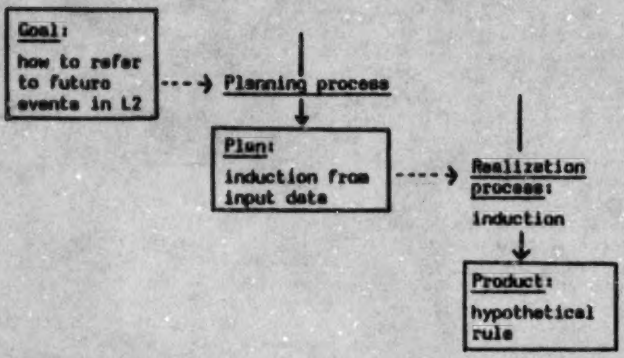

Fig. 3: Example from L2 learning (hypothesis formation) with psycholinguistic realization process

4.2 IL rule formation

Before we discuss IL rule formation in some detail (4.2.3.) it will be necessary to take a closer look at three of the basic areas within the learning process, viz. the IL system and its components (4.2.1.), input/intake to the system, and output from the system (4.2.2.).

4.2.1 Components of the IL system

The IL system consists of implicit and explicit (or metalinguistic) knowledge of unanalyzed chunks, hypothetical rules and fixed rules. The extent to which the learner has stored explicit knowledge determines her ability to monitor her learning of and communication in IL. The terms "implicit" and "explicit" knowledge of IL rules (Bialystok 1979a; Bialystok/Fröhlich 1977) correspond to Widdowson's "expression rules" and "reference rules", respectively (1977). "Unanalyzed chunks" are L2 items which the learner has stored as "prefabricated patterns", i.e. without analyzing them into their underlying rules and elements. Of the two types of rules the IL system includes, the hypothetical rules refer to the hypotheses the learner has set up for herself about the regularities of L2. Together with the unanalyzed chunks, the hypothetical rules form the part of the IL system which is permeable (Adjemian 1976) and thus subject to change, as long as hypothetical

rules are a component of a speaker's IL system, she can be said to be in the process of learning. The fixed rules, on the other hand, constitute the stable rules the learner arrives at as a result of her hypothetical rules having been confirmed (see below). Once a fixed rule has been established, the learner can be said to have stopped learning in this particular IL area. The fixed rules fall into two categories: they are either identical with or different from L2 rules. In the latter case, they constitute the fossilized parts of IL which were first mentioned by Selinker (1972) and which have been extensively discussed in Vigil and Oller (1976) and Selinker and Lamendella (1978).

In particular within SL acquisition, the quantitative distribution of the IL components changes during the learning process: while in the beginning stages of L2 learning the unanalyzed chunks and the hypothetical rules have a proportionately larger share than the fixed rules, these will increase with the advancement of learning until they constitute the only category of IL rules, which implies that the individual is no longer in the process of L2 learning. Accordingly, the learning of a particular rule will typically proceed from the storage of that rule in an unanalyzed chunk over a hypothesis or several concurrent or consecutive hypotheses about the rule to its establisment as a fixed rule.

4.2.2 Input - intake - output

Relative to the IL system, the L2 data the learner is exposed to function as potential input, which is, however, to be distinguished from the actual intake (Corder 1967, 1978a), ie the subset of the input which is assimilated by the IL system and which the IL system accommodates to.

The notion of intake as seen from a learning point of view is more restricted than as seen from the point of view of communication: while in the latter case, all of the L2 input the learner receives and decodes at a particular instance in communication can be regarded as intake, intake as relating to learning refers only to input on the basis of which the learner forms her hypotheses about the L2 rules and tests them out subsequently.

Which part of the available input the learner actually takes in will depend on the state of the IL system and various non-linguistic factors, in particular the learner's motivation for L2 learning. Deriving intake from input by selecting what the IL system is ready to use for hypothesis formation and testing can be referred to as input reduction. As the learner can only process a very limited part of the available L2 data at a time, input reduction is necessary for the learner in order to reduce her learning load at a given point in the learning process.

With respect to different types of input and their impact on the L2 learning process, it should be mentioned that an important difference between input in informal learning settings and in formal instruction is its having the form of raw data in the former and of structured data in the latter case, which implies the inherent possibility for formal instruction to organize the L2 input so that the new learning material corresponds exactly to the learner's actual intake. It is obvious, however, that we do not yet know enough about L2 learning to be able to devise such optimally learner-oriented syllabuses. In formal instruction - with the exception of teaching which follows an extreme version of the direct method - the learner is of course not only presented with linguistic data but also with metalinguistic information about L2. The taken-in metalinguistic information is then stored in the IL system as the learner's explicit knowledge or reference rules which allows for monitoring IL learning and communication. It is perhaps these two input features - structured (selected and graded) L2 data and systematic metalinguistic information - that characteristically distinguish L2 learning from acquisition (Krashen 1976).

The IL data which the learner produces as output are a function of the IL system and of the learner's making use of learning and communication plans and strategies. It is a major problem for the analyst to determine which of the IL components described above the learner has relied on in producing (= planning and realizing, cf. 3.2. above) a particular IL utterance, or if the utterance in question is in fact the result of an additional learning or communication plan or strategy (cf. Adjemian 1976, Færch 1979a). Very often, an IL utterance cannot be attributed to any of these possible sources on the basis of IL output alone. Here we touch upon the problem of IL data elicitation. A discussion of this issue, however, is beyond the scope of this article.

In fig. 4, the relationship between the IL system and input, intake and output is summarized graphically.

4.2.3 Processes in IL rule formation

The main processes in IL rule formation are the formation and testing out of hypotheses about a specific L2 rule. A schematic overview of these processes is contained in fig. 5. In initial

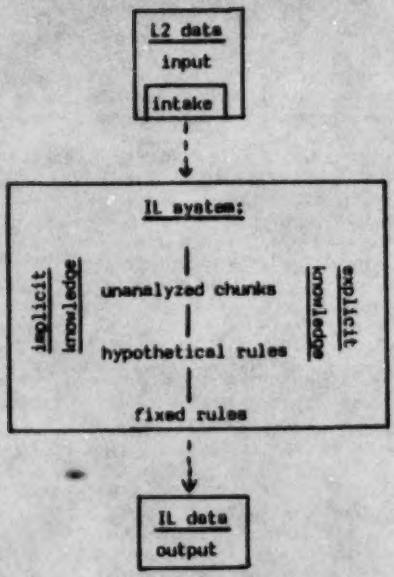

Fig. 4: I'. system, input, intake and output

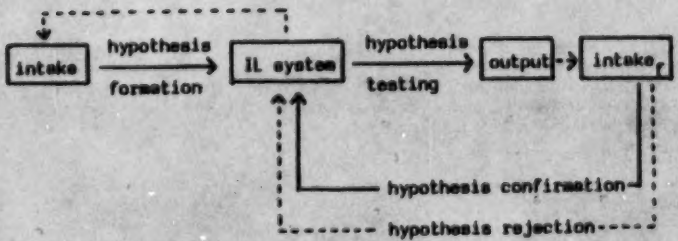

Fig. 5: IL rule formation

hypothesis formation, the intake constitutes the material on which the learner bases the formation of a hypothetical rule. This hypothetical rule is subsequently checked for its validity by being used in communication or, in formal learning settings, in exercises, etc. (hypothesis testing). While thus the overt intention of the learner's using a particular hypothetical rule may be to communicate, its occurrence in her output functions simultaneously as a test as to its validity, ie as a learning device. Likewise, the interlocutor's intention in reacting to the learner's output will usually be to communicate; however, the taken-in part of the interlocutor's input (intake$_2$) also serves as feedback as a result of which the hypothesis under test is either confirmed or rejected. In the case of positive feedback leading to hypothesis confirmation, the hypothetical rule changes its status to become a fixed rule of the IL system. Negative feedback leading to hypothesis rejection, on the other hand, induces the learner to either look for new intake or to use the feedback to form a revised hypothesis. In the latter case, intake$_2$ functions as intake. The procedure of hypothesis formation and testing is repeated until the learner's hypothesis is confirmed and gets stored as a fixed rule.

4.3 Strategies in language learning

In 4.2., we concentrated on the psycholinguistic aspects of L2 learning, without going into a discussion of the contribution of verbal interaction to the learning process. It is clear, however, that without receiving input of some sort (authentic L2 data, input in the form of teaching materials, etc.) there will be severe limits to what hypotheses can be formulated. It is equally clear that hypothesis testing presupposes interaction with the environment, either in the obvious sense of receiving feedback from interlocutors through communicative activities or in the special sense of obtaining feedback by consulting a L2 authority (teacher, native speaker, reference grammar, dictionary).

As concerns automatization, one can draw a distinction between automatizing the physiological elements of speech production and increasing the availability of linguistic means in connection with the planning phase. In the former case, it is possible to increase automatization through drill-like activities, without interacting. This is not possible with the automatization of the planning phase, as this is closely associated with using language creatively in a variety of situations. For this reason, engaging in communication-like activities is also a prerequisite for practising specific aspects of automatization.

The type of activity needed by the learner in order to get into situations in which L2 is/can be used is clearly behavioural (cf. 4.1. above). The same holds for the activity needed in order to reach the goals of testing hypotheses and of increasing automatization, although both of these areas also contain strong psycholinguistic elements: to test a hypothesis, the learner has eg to engage in an interaction in which the hypothetical rule can be used (behavioural activity), but in order to do this, she has to plan and realize her speech production in a specific way, which clearly involves her in psycholinguistic and physiological activity. In the present article, however, we shall focus on the behavioural activity involved in both hypothesis testing and in increasing automatization, and we shall refer to plans which control these types of activity as <u>behavioural plans</u>. In hypothesis formation, on the contrary, the predominant activity included is clearly psycholinguistic. Consequently, we shall refer to plans which control psycholinguistic activity leading to hypothesis formation as <u>psycholinguistic plans</u>.

In applying our defining criteria of strategies to planning in learning we are confronted by the problem that our criterion of problem-orientedness is in need of a more precise specification before it can be used to distinguish some learning goals (viz. problematic goals) from others (viz. non-problematic goals). Such a specification presupposes that we have a good knowledge of what presents itself to learners as difficulties in L2 learning, which quite clearly we do not have at the present moment (cf. the discussion of some previous studies on "difficulty" in Kellerman 1979). That we have difficulty in applying the defining criteria of strategies to learning plans does not imply that the criteria are invalid, related as they are to "mental reconstruction" (see above 2.1.). They would only be invalid if it should turn out that <u>all</u> learning goals present themselves to learners as problems to be solved, which is most unlikely as L2 learning (in particular SL learning) can apparently take place without the learner being consciously aware of this. However, there exists a problem for the IL <u>analyst</u> in applying the defining criteria of strategies to the planning phase of learning, for which reason we can only suggest that certain types of learning goals are intuitively more likely to constitute problems which learners are aware of than others. Thus learners are probably more aware of their having difficulty in planning or realizing a behavioural than a psycholinguistic activity, which implies that it is possibly easier to apply the defining criterion of strategies to behavioural learning plans than to psycholinguistic learning plans. But rather than indulge in further speculations about the potential strategicness of different types of learning plans we shall simply discuss those plans which we believe <u>could</u> be employed as learning strategies by some

learners in some situations (psycholinguistic strategies in 4.4., behavioural strategies in 4.5.). It will then be a matter of future research to assess to what extent and in what specific areas of L2 learning learners are consciously aware of their having learning problems, and how this can be made use of in connection with FL learning/teaching.

4.4 Psycholinguistic learning strategies

In forming hypotheses about L2 rules, learners can basically rely on two sources: on the L2 intake and on prior knowledge and experience relating to language learning and communication. The learning strategies to be discussed below can be classified according to how they relate to these two sources. Thus we get strategies that relate to L2 intake exclusively ("induction", 4.4.1.) and strategies that make use of prior knowledge and experience (("inferencing" and "non-inferencing transfer", 4.4.2.). Strategies that make use of L2 intake presuppose input reduction as described above (cf. 4.2.2.), as the learner does not make use of the entire input available but only uses part of it for hypothesis formation.

4.4.1 Psycholinguistic learning strategies relating to L2 intake exclusively: "induction"

If the learner builds her hypotheses on the basis of taken-in L2 material exclusively, she uses the learning strategy of induction. There are two conditions in the learning situation which make it particularly likely for the learner to rely on induction: (1) she has no prior knowledge of L2 which could be used in deriving hypothetical rules from the intake; (2) she does not want to use her knowledge of L1 and/or of other languages as she does not assume that those languages and L2 are sufficiently similar so that the application of such knowledge could be successful. If either of these two conditions does not apply, the learner is likely to use her linguistic and communicative knowledge available in order to build hypotheses about L2 on the basis of L2 intake.

4.4.2 Making use of prior knowledge and experience: "inferencing" and "non-inferencing transfer"

In most learning situations it is probably the case that the learner will make use of prior knowledge and experience in order to form hypotheses about L2. This can be done in two ways: (1) by applying prior knowledge and experience to L2 intake ("inferencing"); (2) by relying exclusively on prior linguistic knowledge without applying it to intake ("non-inferencing transfer"). Before we go into a discussion of these types of psycholinguistic learning strategies it is necessary to specify what we consider relevant categories of prior knowledge and experience in the present context.

4.4.2.1 Types of prior knowledge

Making use of prior knowledge is certainly not specific to language learning but is employed in all kinds of learning tasks, as has been emphasized by cognitive psychology (see in particular Ausubel 1968). In L2 learning, however, "prior knowledge" refers primarily to three areas:

(1) To the learner's entire linguistic experience which includes her implicit and explicit knowledge of L1, other hitherto learned languages (Ln) and her IL as relating to the L2 being learned. From this perspective, the debate about whether or not the learner relies on her L1 in L2 learning becomes futile: rather, the question to be asked is to what extent and under what learning conditions the learner prefers to rely on the one or the other type of her linguistic knowledge (Ervin-Tripp 1974; Taylor 1974; 1975b; J.James 1977).

(2) To her entire communicative experience which directs her attention to those L2 aspects which appear to be most relevant for satisfying her communicative needs. Exploiting her communicative experience also implies a reduction of the learning task as the learner has already acquired communicative competence in her L1. However, the learner's implicit pragmatic and discourse knowledge does not always seem to be readily available for transfer to L2 learning, as is evident from data of learners' verbal behaviour in communication (Götz 1977; Nold 1978; Kasper 1979a,b,c).

(3) To the learner's language learning experience, which implies that she has recourse to the learning plans by means of which she arrived at her previously learned/acquired linguistic and communicative proficiency, and that she will preferably use those plans in L2 learning which proved to be most successful on prior occasions. This is in line with Reibel's remark that L2 learning is guided by "underlying learning principles, known in advance by the learner before he even undertakes a learning task" (1971:89).

4.4.2.2 "Inferencing" and "non-inferencing transfer"

As described by Carton, "in inferencing, attributes and contexts that are familiar are utilized in recognizing what is not familiar" (1971:45), or as defined by Bialystok, inferencing is "the use of available information to derive explicit linguistic hypotheses" (1979b:376; see also Bialystok/Frühlich 1977, 1978). Thus inferencing is a clear specimen of combining the two sources for hypothesis formation described above: intralingual, interlingual and extralingual cues serve as a basis for probalistic guesses about the meaning of a new L2 item or the rule underlying a string of L2 data (Carton 1971).

Inferencing is a learning strategy which can apply to all kinds of learning environments. The extent to which it is made use of in formal instruction, however, will crucially depend on the teaching method. Thus highly explicit-deductive methods will leave little room for inferencing, while implicit-inductive methods rely heavily on this type of strategy. Other than in informal learning settings, inferencing in L2 teaching will mostly be guided inferencing induced by a specific presentation of L2 material which guides the learner's perception and hypothesis formation process.

To the extent learners apply their prior linguistic experience to L2 intake, inferencing can be more precisely characterized as a transfer strategy. Transfer strategies can also be used independently of L2 intake, learners forming hypotheses about L2 on the basis of their prior linguistic knowledge exclusively ("non-inferencing transfer"). Whether an inferencing or a non-inferencing transfer strategy is used in a given situation is probably more a result of whether L2 data are available than of a conscious choice on the part of the learner: if L2 data are available, it stands to reason that learners will make use of these by transferring their linguistic knowledge to L2 intake rather than ignore them.

4.4.2.3 Types of transfer strategies

Transfer strategies, no matter whether they are applied to L2 intake or not, can be subclassified into three categories, depending on which types of linguistic knowledge the learner makes use of.

4.4.2.3.1 Interlingual transfer

In the case of L1 or Ln knowledge being applied to the formation of a hypothetical rule, the learner employs interlingual transfer. Some attention has recently been given to the conditions governing learners' readiness for interlingual transfer. A necessary precondition seems to be that the learner finds a "point of reference" in the language she transfers from (J. James 1977), which implies that the learner must consider L1/Ln and L2 as sufficiently similar for the transfer to be successful.

A relevant variable in transferability is the degree to which learners perceive a given L1/Ln item/rule as L1/Ln specific or neutral: only in the latter case will they transfer it to L2 as has been empirically established by Kellerman (1977; 1978) and Jordens (1977).

4.4.2.3.2 Intralingual transfer

From a psycholinguistic point of view intralingual transfer does not differ from interlingual transfer. In terms of the pro-

duct and the L2 learning process in general, however, it is clearly relevant to specify which part of her previously learned/acquired linguistic knowledge the learner transfers.

Intralingual transfer as a strategy used in forming a hypothesis about a L2 rule presupposes that the learner already has some IL knowledge at her disposal. In initial hypothetical rule formation, during the first stages of L2 learning, this will hardly be the case. A learning strategy which does not build on prior IL knowledge but exclusively on the new L2 data the learner has selected for intake plus some general knowledge about language, such as that there must be some regularity underlying the L2 data, cannot justifiably be termed intralingual transfer but is simply L2-based induction as mentioned above (4.4.1.). The difference between the two strategies is schematized in fig. 6.

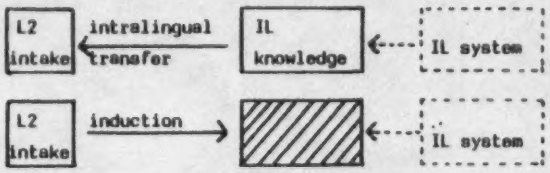

Fig. 6: Intralingual transfer and induction

The impossibility for the learner to rely on IL knowledge in forming hypotheses about new L2 rules can account for the well documented fact that interlingual transfer prevails in the early L2 learning stages (eg Taylor 1975a,b; Dommergues/Lane 1976).

In subsequent hypothesis formation or hypothesis revision, on the other hand, new intake may be analyzed in terms of previously formed fixed or hypothetical rules. In this case, a given IL rule may be said to be generalized to new L2 data, or a new hypothetical rule may be formed in analogy to a rule already available (eg "use the same ablaut pattern with 'bring' as with 'ring' and 'sing'", or "use 'ought' + verb like 'shall' and 'must'").

While thus generalizing (Jain 1974; J.James 1977) and analogizing (Taylor 1975a; Dommergues/Lane 1976) can be seen as cases of intralingual transfer, ie of making use of already available IL knowledge, some of the other categories often found in IL literature as referring to intralingual transfer seem to be problematic conceptualizations from a learner's perspective. In particular,

the notions of simplification (Taylor 1974; Richards 1975; Selinker/Swain/Dumas 1975; Fathman 1977) and overgeneralization (Taylor 1974; 1975b; Selinker/Swain/Dumas 1975) seem to be misguided: simplifying a FL rule presupposes knowing the complex rule, which the learner is not very likely to do (Corder 1977; Færch 1979c, 1980a). Likewise the learner cannot be said to overgeneralize a particular rule; rather, she forms an initial hypothetical rule of high generality (which is becoming more restricted in the advancement of learning) and generalizes previously formed rules to new L2 data, as described above.[14] Both the notions of simplification and overgeneralization make sense only from the analyst's or native speaker's point of view which, however, is not the perspective we adopt here.

4.4.2.3.3 Inter-/intralingual transfer

One often finds the implicit or explicit assumption in the literature that in transferring previous linguistic knowledge to a new L2 learning task, learners rely either on their L1/Ln or on what IL knowledge they already have. Thus Dommergues/Lane (1976) posit "two independent sources of error" which result in either "interference" (from L1) or "analogy" (within IL). However, "the phenomenon of errors caused by the cross-association of both L1 and L2 also seems to exist" (Jain 1974:190), cf. the discussion of "Plurikausalität" in Kielhöfer/Börner 1979:89 ff. Basing the formation of a hypothetical rule on both L1 and IL presupposes again that the learner perceives L1 and L2 as sufficiently similar so that she can "project" (Kellerman 1977:85ff) L1 rules onto L2. Thus learners may classify L2 verbs into strong and weak inflectory classes on the basis of their having strong or weak inflection in L1, as eg a native speaker of German who arrives at English "shaked" as past tense of "shake" in analogy to the weak inflection of German "schütteln" ("schüttelte"). (For more examples and discussion of inter-/intralingual transfer, cf. J. James 1977:11; Jordens 1977:6ff; Kellerman 1977:65ff).

4.4.3 Psycholinguistic learning strategies: summary

After having described the various types of psycholinguistic learning strategies which are of relevance for hypothesis formation, we can offer the following survey of the area (fig.7).

4.4.4 Non-learning strategies

So far, the terms "simplification" and "overgeneralization" have been rejected as it was argued that designating learning strategies as simplifying or overgeneralizing linguistic rules presup-

L2 intake	L2 intake and prior knowledge	prior knowledge
induction	inferencing based on (a) communicative experience (b) language learning experience (c) linguistic experience: (i) interlingual transfer (ii) intralingual transfer (iii) inter-/intralingual transfer	

Fig.7: Summary of psycholinguistic learning strategies

poses that the learner knows that these rules are in fact less simple and less general, which is very often not the case. However, if this presupposition applies, it is of course perfectly appropriate to conceptualize what the learner does as simplification or overgeneralization. The learner might more or less consciously decide not to learn how certain linguistic distinctions, rules and features work because this seems unnecessary for her specific communicative purposes. Thus she may refuse to learn a range of more specific words if a superordinate term works all right, to learn verb inflections if the infinitive turns out to suffice, to learn the subjunctive if the indicative or infinitive function just as well. Whenever the learner knows that there is a certain rule, item or subsystem to learn but refuses to do it, we might well describe this refusal as her decision to simplify (Richards 1975; Taylor 1974; Selinker/Swain/Dumas 1975; Fathman 1977) or regularize (Taylor 1975a; Slama-Cazacu 1973) a linguistic subsystem, overgeneralize (Taylor 1974; 1975b; Selinker/Swain/Dumas 1975) a rule, reduce redundancy (Jain 1974, Taylor 1974), or minimize grammatical frills (Dulay/Burt 1976). We have difficulties, however, in conceiving of these decisions as learning strategies: rather, they seem to be decisions leading to non-learning of the L2 area involved (Shapira 1978). Categorizing them as learning strategies would be justified only in so far as they might indirectly lead to the learning of other L2 areas, by reducing the learner's general learning load, thereby increasing her free learning capacities.

The main reason why categories which, as we hope to have shown, are inappropropriate conceptualizations of learning strategies are so abundant in the literature seems to be a) that authors are often inconsistent in their "focussing on the learner" in that they sometimes shift to an analyst's/native speaker's perspective without indicating this shift, b) that they hold too simple a view of the relationship between certain IL output products and their underlying plan or strategy governed processes. Thus an IL utterance

which is simpler than an equivalent L2 utterance need not be due to simplification; the use of a L2 rule in a context where it does not apply need not be due to overgeneralization; reduced redundancy as compared to L2 norms need not be due to reduction. Rather, all these IL products could be due to the learner's using a high generality rule and testing its range of application, as we have argued above.

4.5 Behavioural learning strategies

While psycholinguistic learning strategies function in the formation of hypothetical rules only, the range of application of behavioural learning strategies is much broader, as mentioned above (4.3.). As well as bringing about the appropriate situation for L2 learning to be possible, behavioural learning strategies are employed by learners both in connection with hypothesis testing and rule automatization.

Research into behavioural learning strategies has especially been conducted in the projects "The Good Language Learner" and "Second Language Learning and Teaching in Classroom Settings" at OISE, Toronto, and instead of listing the strategies found in these projects we recommend the relevant reports to the reader's attention (Rubin 1975 ; Stern 1975; Naiman/Fröhlich/Stern/Todesco 1978; Bialystok/Fröhlich 1977; Wesche 1979).

We shall confine ourselves to the following three points about behavioural learning strategies:

1) Care should be taken not to confuse actual behavioural strategies, ie strategies controlling the activities learners indulge in in order to learn L2, with their attitudes towards L2 learning. While attitudes such as "empathy with L2 speakers" (Stern 1975) or "low degree of inhibition" (Rubin 1975) can have a positive effect on L2 learning (although, interestingly enough, Naiman/Fröhlich/Stern/Todesco 1978 could not establish a correlation between personality factors and cognitive styles on the one hand and successful L2 learning on the other), they in themselves are not strategies but rather underlying psychological conditions which heighten the likelihood for the learner to use certain learning strategies (cf. the parallel distinction below between avoidance/achievement behaviour and reduction/achievement strategies (5.5.5.)).

2) One of the striking differences between SL and FL learning is that what SL learners have to achieve through developing and realizing behavioural learning strategies, FL learners often obtain automatically as part of the institutionalized context of FL teaching: behavioural learning strategies become behavioural teaching strategies. It is an important task for FL teachers to make their learners aware of this fact, so that the learners come to acknowledge the existence of behavioural learning strategies. This is not

only important for their subsequent learning of FL's after school-leaving but also for their getting as much as possible out of informal exposure to and interaction with the L2 outside the classroom.

3) It might be useful to specify at what stages in the learning process the learner employs certain behavioural learning strategies, and relate them to the specific functions they serve in L2 learning. Thus "attending to form and meaning" (Rubin's strategies 4 and 7) and "coming to grips with the language as a system" (Naiman/Fröhlich/Stern/Todesco 1978:103) are most crucial in hypothesis formation and testing, ie in the process of IL rule formation. "Practising L2", on the other hand, which is a behavioural learning strategy mentioned by all of the authors referred to above, is relevant in rule-automatization only as it presupposes the establishment of the rule to be practised in the IL system. As was pointed out in 4.1., we see no contradiction in emphasizing the importance of rule automatization and holding a cognitive view of language learning at the same time: as there is no direct way from the integration of an IL rule into the learner's cognitive structure to the free availability of that rule in communication, ie without the learner having to monitor, we have to assume an intervening variable which can account for the difference between those two stages in L2 learning. This variable can be referred to as rule automatization, and the more obvious plan to follow in order to achieve an automatic access to the IL system is practising L2 in a variety of situations. Other behavioural strategies mentioned in the literature such as "an active task approach", "the use of IL for meaningful communication", the "management of affective demands" (Naiman/Fröhlich/Stern/Todesco 1978:13ff) and "self-exposure to L2" (Wesche 1979) seem to be most appropriately categorized as "global" behavioural strategies as they do not refer to any particular phase in the learning process but rather to L2 learning as such.

5. Processes and strategies in communication

In this chapter we shall focus on the use of strategies in communicative events which are performed in an IL. We first modify the general model of goal-related intellectual behaviour to communication (5.1.), then go into those aspects of the model which are particularly relevant for a discussion of IL communication and the use of communication strategies (5.2.). In 5.3., we establish some principles for a categorization of communication strategies within speech production. Such a categorization is then carried out in 5.4., which represents as comprehensive a survey of communication strategies as we can give at the present moment. 5.5. contains a brief discussion of receptive strategies.

5.1 General model

The general model we established in 3.2. contains the two phases of planning (goal, planning process, plan) and realization (plan, realization process, and product). We can specify these in the following way with respect to communication.

Goal

The goals we are concerned with are clearly communicative goals, ie goals relating to the activity of engaging in communicative events. The goals consist of actional, modal, and propositional elements. The actional element is associated with speech acts and discourse functions, the modal element with the role relationship holding between the interactants, and the propositional element is associated with the content of the communicative event.

A communicative event (eg a conversation or writing a letter) can be characterized as having both a global goal (or possibly a number of global goals), holding for the entire event, and a series of local goals which appear as part of the realization of the global goal(s). This hierarchical structure of goals is of some relevance for a discussion of communication strategies, as we shall see in 5.3.

Certain types of communicative events involve the language user in both producing and receiving language, ie the global goal consists of a series of local goals, some of which are productive (performing a speech act with a certain modality and a certain propositional content), some receptive (reconstructing the intended speech act with the intended modality and propositional content). Although a good deal of research has been carried out in connection with speech reception in general, little attention has so far been paid to the area of receptive communication strategies. For this reason we shall concentrate on speech production and productive communication strategies in the following, with the consequence that the communication model we establish will be a model of speech production. (Receptive strategies will be briefly discussed separately, 5.5.).

In the planning phase, the language user collects rules and items which she considers most appropriate (cf. 3.2., 3.4.1. above) for establishing a plan, the realization of which will lead to verbal behaviour which is expected to satisfy the original goal. The rules and items are mostly selected from the code(s) within which the communicative event is performed. In L1 communication, planning processes are normally subconscious and highly automatic, a fact which may explain the occurrence of transfer from L1 in communication performed by means of an insufficiently automatized L2 (see further below, 5.2.2.). The product of the planning process is a plan which controls the realization phase. When dealing with a speech production model, the realization phase consists exclusively of neurological and physiological processes, leading to articulation of the speech organs,

writing, the use of gestures and signs, etc. This part of the communication model is of relevance for a discussion of communication strategies only in so far as the individual may anticipate or experience problems in the realization of a plan (cf. 5.3.2.).

We can now present the following comprehensive model of speech production:

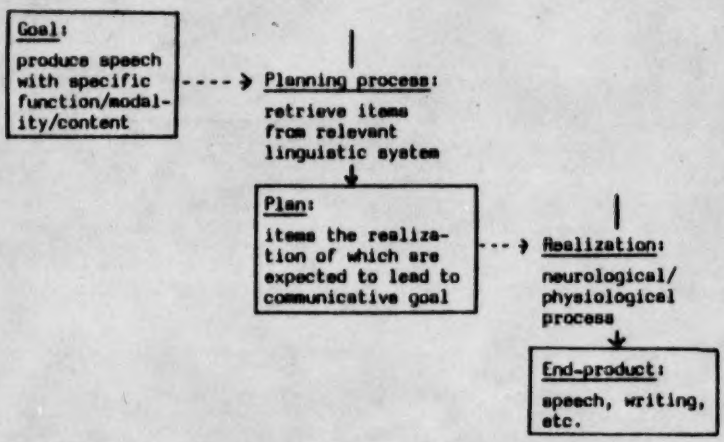

Fig. 8: Communicative model of speech production

5.2 Goals and plans in IL communication

5.2.1 Goal Formulation

In 3.2. we referred to "Einschätzung" as part of the planning phase: the individual has to assess the situational conditions in order to select the most appropriate plan. Assessing situational conditions for communicative behaviour is not, however, a process the relevance of which is restricted to planning only: deciding on what goal(s) to set up clearly depends on assumptions about what can be achieved in a particular situation. Furthermore, on the basis of assumptions about what conditions hold for communication in specific situations, individuals may avoid or engage in different types of communicative situations. As the individual's need for using communication strategies and her ultimate choice of strategies are intimately related to these aspects of Einschätzung, we shall go a little more into this in the present chapter.

"Practising L2" was mentioned above (4.4.) as a generally acknowledged behavioural learning strategy. Thus from a learning perspective it is evident that the more communicative situations the learner engages in and the greater the variety, the more possibilities she gets not only for practising her IL but also for constructing hypotheses about L2 and getting them tested. However, IL users sometimes avoid situations which they expect will involve them in communication which surpasses their communicative resources, hereby preventing themselves from expanding their IL system. These may be situations which call for the use of specific types of illocutionary acts, specific topics, or situations in which special attention has to be paid to marking interpersonal relations linguistically (eg with respect to politeness).

If IL users keep out of communicative situations which, through projected or anticipated Einschätzung, they consider problematic, the need for devising communication strategies to reach goals which are problematic is clearly reduced. It is self-evident that this type of avoidance behaviour - "communication avoidance" - blocks all subsequent stages in the communication model, and although this may be a highly significant aspect of IL users' general behaviour it is of very marginal interest for a discussion of IL communication which clearly presupposes that some communicative activity takes place. In the following, it is taken for granted that the IL user has a communicative goal, relative to the situation she engages in. As we shall see below (5.4.2.), the goal may be "reduced" compared to the goal which the IL user would normally have in a similar communicative situation, if this was performed in her L1.

Whether the IL user opts for complete "communication avoidance" or "goal reduction" depends to some extent on the degree of optionality of the problematic aspect of communication in a particular situation. To take an example: if the situation is more or less defined by the occurrence of specific speech acts, it is difficult to participate in the situation and at the same time reduce one's communicative behaviour with respect to these speech acts. The same speech acts, however, may be of a more optional nature in a different type of communicative situation, which allows the IL user to engage in the situation without having to carry out what she considers problematic speech acts: she can reduce her "global" communicative goal. As another example of "goal reduction" can be mentioned IL users engaging in communicative situations which, if performed in their L1, would have involved them in both speech production and speech reception but in which, due to their experiencing problems in speech production, they reduce their role to that of the "active listener".

5.2.2 Planning

The planning process, the objective of which is to develop a plan which can control the realization phase, is primarily sensitive to the following three variables: the communicative goal, the communicative resources available to the individual, and the assessment of the communicative situation ("Einschätzung"). This is illustrated graphically in fig. 9.

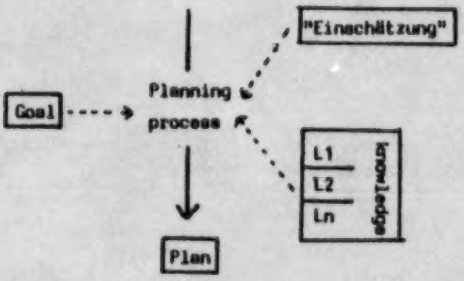

Fig. 9: Variables in the planning phase

Through "Einschätzung" the individual builds a hypothesis about which parts of her linguistic knowledge are shared by her interlocutor(s). This is clearly an important aspect of communication in general, as it is necessary in most communicative situations to establish what one's actual communicative resources are relative to the specific situation, as opposed to one's potential resources.

In most cases the interactants choose one code as the basic code to be used. However, within the limits imposed by the shared linguistic knowledge there is the possibility of switching codes whenever problems crop up (cf. 5.4.3.2.1.).

The fact that the IL user builds a hypothesis about her "actual" communicative resources in a specific situation does not imply that the individual will always produce utterances which are controlled by plans based on these resources. First of all, the individual may have to deliberately go beyond what she considers shared knowledge as a strategy in order to solve a communicative problem. Second, due to the fact that different languages are likely to be automatized to different degrees, elements originating from highly-automatized languages may be realized contrarily to the Einschätzung.

Whether we say that such occurrences of non-intended transfer from L1 and possibly other Ln's is the result of subconscious, highly automatic plans which get incorporated into the general, L2 specific, plan, or whether we say that transfer features in linguistic performance are the result of non-planned realization depends on the general stand we take on the question whether all intellectual goal-related behaviour is planned or not (cf. 3.2.). However, this is of little consequence for our discussion of communication strategies, as these quite clearly relate to behaviour only to the extent that this is planned.

As we discussed in 3.4.2., planning can be more or less conscious, which was one of our reasons for not wanting to adopt a criterion of consciousness in the planning phase as a defining criterion for strategies. One condition for planning to be conscious is that the individual has some explicit linguistic knowledge. This brings conscious planning close to what in Krashen's terminology is "monitoring": controlling the performance by referring to linguistic rules and items the language user has a conscious knowledge about (see eg Krashen 1978), either because these have been learnt explicitly or because implicitly "acquired" elements have been "conceptualised" (Frauenfelder/Porquier 1979, see also Bialystok 1979a).

5.3 Strategies in communication

As a point of departure, let us repeat our definition of strategies from 3.4.2., modifying it to communication: communication strategies are potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular communicative goal. Both the "plan" and the "problem" part of the definition require further discussion before we can proceed to a description of main types of communication strategies.

5.3.1 Global - local plans and strategies

In 5.1., we mentioned the distinction between global and local goals in communication. Parallel with this we can draw a distinction between global plans and local plans. Global goals/plans are restricted to very general decisions about which communicative role to perform in a certain situation, as exemplified above by the amount of speech one decides to produce. Other potential decisions to be made in connection with global plans have to do with choice of register (eg "simplified" or formal/informal registers, cf. Ferguson 1971, Labov 1970), level of "directness" (Searle 1975, House/Kasper 1978), distribution of communicative roles among interactants (J.Wagner 1979). To the extent problems appear in connection with this global phase of communication a need arises for global strategies to be constructed.

Most of the goals in communication are no doubt local, made during a communicative event. For this reason, most communication strategies are employed in order to solve problems in connection with reaching local goals. These strategies will be referred to as local strategies. In fig. 10, we give a schematic representation of the distinction between global and local goals/plans/strategies.

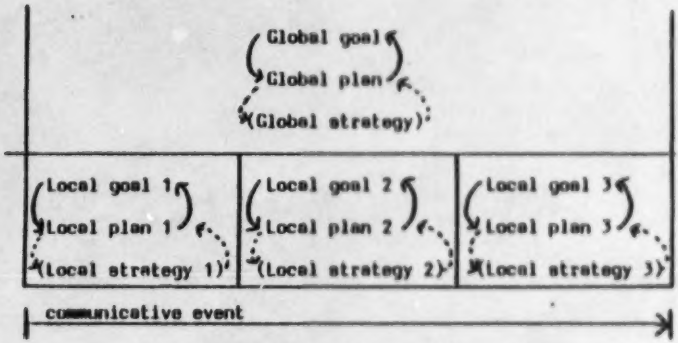

Fig. 10: Global and local goals, plans, and strategies

We have characterized communication strategies as plans. This is perhaps potentially confusing unless one points out explicitly that "strategic plans" are not identical with plans established in order to reach a communicative goal: the goal of a strategy (the "strategic goal") is the problem, and the product of the realization phase controlled by the strategy is a solution to the problem. This is represented in fig. 11.

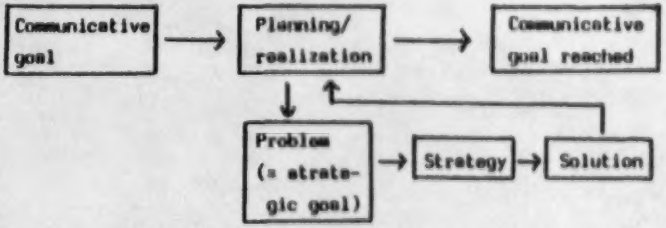

Fig. 11: Communicative and strategic goals

In 5.3.2. we take a closer look at "strategic goals" (= problems in communication), and in 5.3.3. we focus on some basic differences in how individuals can solve these problems.

5.3.2 Problems in communication

In 3.4., we divided problems into problems in the planning phase and problems in the realization phase. We shall now specify what types of problems are likely to crop up within either of the two phases when we are dealing with communication.

Problems within the planning phase may occur either because the linguistic knowledge is felt to be insufficient by the language user, relative to a given goal, or because the language user predicts that she will have problems in realizing a given plan.

The former type of problem is particularly characteristic of IL communication, as IL systems are typically restricted compared to L1 systems. Not surprisingly, most of the literature on communication strategies has focussed on this type of problem, and the majority of strategies to be discussed below are strategies aimed at solving problems due to insufficient linguistic knowledge.

The latter type of problem is characteristically associated with the learner being concerned with fluency or correctness. If a plan necessitates the realization of non-automatized items or rules, this may lead to non-fluent speech production which, in certain communicative situations, may be considered problematic by the IL user, who may therefore try to prevent the problem by changing her plan. Similarly, if a plan contains rules or items which are still of a hypothetical nature, the realization of the plan may result in incorrect utterances which, at least in some (normally formal) contexts, may be considered undesireble. Again, the IL user may try to prevent the problem from cropping up by changing the plan.

Problems within the realization phase have to do with retrieving the items or rules which are contained in the plan. This is the tip-of-the-tongue phenomenon, well-known from L1 communication. The difference between anticipating fluency or correctness problems and experiencing retrieval problems is that in the former case, it is possible to avoid getting into a problem by developing an alternative plan, whereas in the realization phase problems are there and have to be solved. Thus we could characterize strategies associated with the former type of problems as "problem-avoidance strategies" and strategies associated with the latter type of problems as "problem-solving strategies".

5.3.3 Major types of strategies

When confronted by problems in communication, language users can either base solutions on avoidance behaviour, trying to do away with the problem, normally by changing the communicative goal, or on achievement behaviour, attempting to tackle the problem directly by developing an alternative plan. On the basis of these two fundamentally different approaches to problem-solving we can draw a

distinction between two major types of strategies: reduction strategies, governed by avoidance behaviour, and achievement strategies, governed by achievement behaviour. The relationship between problem, type of behaviour and type of strategy is represented in fig. 12.

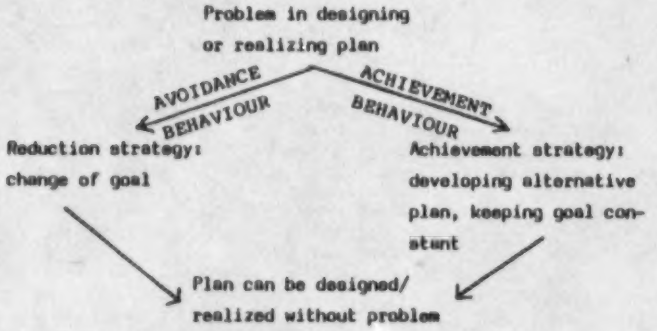

Fig. 12: Types of behaviour and types of strategies

That reduction and achievement strategies result in very different types of solutions to problems can be seen from fig. 13, which conflates figs. 11 and 12.

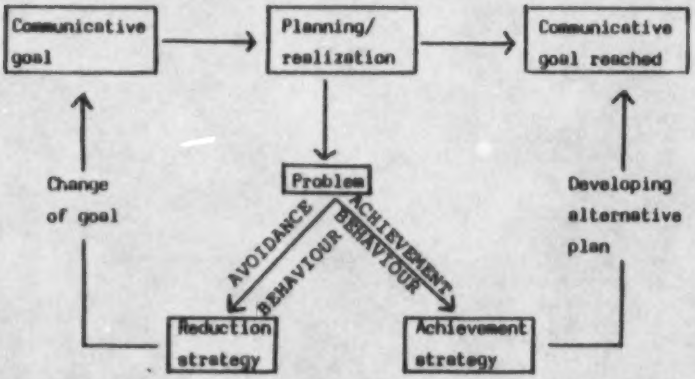

Fig. 13: Effects of reduction and achievement strategies

It is hardly surprising that the choice of strategy is not only sensitive to the underlying behaviour (avoidance/achievement) but also to the nature of the problem to be solved. In particular, problems that relate to fluency and correctness (cf. 5.3.2. above) constitute a special class in that they frequently cause the language user not to use the most "obvious" parts of her IL system because she expects that there will be problems in realizing them. "Formal reduction" of this kind (cf. Váradi 1973) represents a special type of communication strategies, first of all because it is neutral with respect to the underlying behaviour (see further 5.4.1. below), second because formal reduction is frequently closely related to reduction of achievement strategies: if eg the problem is one of fluency and the IL user "reduces" her IL system with respect to the problematic item/rule and does not incorporate it into her plan ("formal reduction") she may have to develop an alternative plan based on her - now "reduced" - linguistic resources in order to reach her communicative goal ("achievement strategy").

By adding together what we have said about types of problems, types of behaviour and types of strategies, we obtain fig. 14 (see next page) which will serve as a basis for our description of individual communication strategies in 5.4.

5.4 Communication strategies - a classification

5.4.1 Formal reduction strategies

In order to avoid producing non-fluent or incorrect utterances by realizing insufficiently automatized or hypothetical rules/items, learners may decide to communicate by means of a "reduced" system, focussing on fixed rules and items which have become reasonably well automatized. Following Váradi (1973) we refer to this as "formal reduction", a term which should not be taken to imply that a substantial reduction of the system takes place: what happens is that the learner in a specific communicative situation avoids using what to a native speaker would be the most appropriate way of reaching a certain communicative goal (cf. Kleinmann's "linguistic avoidance", 1977:102), and makes do with a subset of the rules/items which she has at her disposal.

As mentioned in 5.3.3., formal reduction is often closely related to reduction or achievement strategies. It is evident that a distinction between formal reduction as such and the subsequent application of other strategies can only be made from an analytical point of view, as no such clear-cut distinction between a stage of reduction and a stage of compensation exists in actual communication: whether a learner reduces her linguistic system or not largely depends on what compensatory strategies are available and whether these are considered appropriate. Thus it no doubt makes a difference

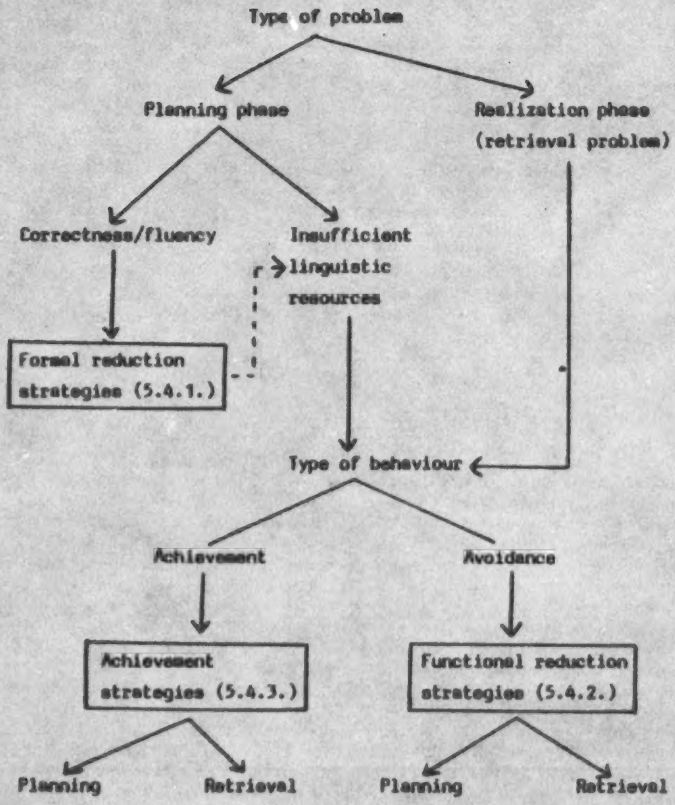

Fig. 14: Overview of major types of communication strategies

whether the compensatory strategy is an achievement or a reduction strategy: If, for instance, the consequence of formal reduction is a reduction of the message, the language user might decide not to reduce formally.

Our discussion of formal reduction strategies will focus on the following two questions:

(1) Why should the learner want to reduce her linguistic system in the first place?

(2) Which areas of the linguistic system are susceptible to formal reduction?

5.4.1.1 Avoiding errors and facilitating speech

We have already mentioned two reasons why learners adopt formal reduction strategies: they want to avoid making errors and/or they want to increase their fluency.

Error avoidance (Jordens 1977) may to some extent be psychologically determined, some language users feeling badly about communicating in a foreign language unless they can do so without exhibiting linguistic handicaps. An additional reason may be that the language user assumes that linguistic correctness is a prerequisite for communicative success, an assumption which probably derives more from the foreign language classroom than from real-life experiences (Enkvist 1973:18).

That formal reduction may help increase one's fluency was observed by Váradi, who writes that "target language learners may notice that elimination of certain formal elements does not interfere with the transmission of meaning; it may facilitate communication by increasing fluency" (1973:9-10). A similar view is taken by Tarone (1979), who reserves the term "production strategy" to strategies which are employed to increase efficiency in speech production.

The difference between formal reduction caused by error avoidance and formal reduction with a view to facilitating communication is that in the former case the result is what is considered by the learner correct language, whereas in the latter case the learner may perform utterances which she knows are not correct but which she considers appropriate from a communicative point of view. This distinction has some consequences for the subsequent choice of strategies: in the case of error avoidance the learner will employ those strategies which she assumes will result in correct L2 utterances (ie either reduction strategies or achievement strategies like paraphrase, cf. 5.4.3.2.3), whereas in the case of communicative facility the learner may adopt strategies that lead to performance which she knows is not correct as seen from a L2 point of

view but which, in the given situation, will work. Strategies of this latter type will typically be achievement strategies such as overgeneralization and borrowing (cf. 5.4.3.2.1., 5.4.3.2.3.).

5.4.1.2 Types of formal reduction

All areas of the IL system are susceptible to formal reduction. However, because of the different communicative status of items from different linguistic levels there are some significant differences with respect to what subsequent strategies are needed in the case of reduction at the phonological, the morphological, the syntactic and the lexical level. Most items at the phonological level are highly obligatory in all communicative situations. Thus it is no doubt the exception, rather than the rule, that a particular phoneme is restricted to specific words (eg to loanwords only). This has as a consequence that reduction at the phonological level due to avoidance of a particular phoneme cannot generally be achieved through reduction strategies such as topic avoidance (cf. 5.4.2.2.) but only through achievement strategies aimed at providing a formal alternative to the IL item being avoided. To take an example, it would be impossible for learners of English to reduce their phonological IL system by the /ð/ phoneme by completely avoiding lexemes that contain /ð/ - formal reduction with respect to /ð/ can only be achieved by adopting other ways of realizing the phoneme (eg by overgeneralizing the use of /d/ or by borrowing a L1 phone).

It should be clear from the preceding description of formal reduction at the phonological level that some examples forwarded by IL researchers as illustrative of phonological avoidance are not treated in the present analysis as examples of phonological reduction but rather as examples of reduction at the lexical level. This is eg the case with Tarone, Cohen and Dumas's example of learners avoiding to say "pollution problems" because they experience a problem with /l/ and /r/ in English (1976:82). We would say that the learners in question apply the strategy of formal reduction, reducing their lexical system due to phonological avoidance. In other words, we want to maintain a distinction between what is affected by the strategy of formal reduction and why the strategy is applied.

So far our discussion has focussed implicitly on segmental aspects of the phonological level. Very little research has been done at the suprasegmental phonological level of IL, and consequently it is difficult to discuss formal reduction at this level. Danish learners of English often do not use glides and do not expand their pitch range, which can be adduced as examples of reduction of the suprasegmental part of their IL system, provided the learners know about these particular aspects of English phonology, and provided they are capable of producing them if pressed to do so.

The situation at the morphological level is, at least as seen from a superficial point of view, similar to that at the phonological level: grammatical morphemes are normally obligatory in particular linguistic contexts, and these contexts are used in most communicative situations. Thus, to take but one obvious example, temporal suffixes are obligatory in the context of a main verb in English, and main verbs occur in most communicative situations. Hence it might be expected that morphological reduction would entail the application of similar types of achievement strategies as is the case with phonological reduction. This is not necessarily so, however. The fact that grammatical morphemes are normally obligatory sentence constituents does not imply that they also add to the meaning of the sentence - frequently they are in fact semantically redundant. For this reason learners, in order to facilitate speech production, may avoid some of these redundant features without feeling a need to compensate. Such morphological reduction due to "redundancy avoidance" (cf. the discussion of "redundancy reduction" in Dulay/Burt 1972, Jain 1974, Taylor 1974, 1975b) is exceptional among formal reduction strategies in that it does not necessitate the subsequent application of compensatory strategies.

In some cases reduction of the morphological part of the learner's IL system does have to be compensated for by the application of various achievement strategies, normally by substituting syntactic or lexical items for the avoided morphological item. This is eg the case with some learners of French, described by Hamayan and Tucker, who avoided subordinate clauses containing the subjunctive, using instead an infinitival verbal complement ("il faut aller" for "il faut que j'aille") (1979:84).

The situation at the syntactic level resembles that at the morphological level insofar as there is a distinction between what learners conceive of as obligatory and optional structures. Whereas reduction of what to the learner appears to be an obligatory structure will necessarily result in either functional reduction or performance assumed to be erroneous, reduction of assumedly "optional" rules can be achieved simply through non-application of the rules in question. An example would be the passive rule in English, which learners might avoid simply by not applying it, forming their sentences according to the rules governing active sentence structures instead. Formal reduction of this type can be difficult to detect as the result of the strategy is often a well-formed L2 sentence which is appropriate in the immediate context, and the application of the strategy only shows through "overindulgence" in particular structures (cf. Levenston 1971).

Formal reduction at the lexical level can be achieved both by means of reduction strategies (as eg "topic avoidance", cf. 5.4.2.2.) and by means of achievement strategies (such as "paraphrase" and "borrowing", cf. 5.4.3.2.1., 5.4.3.2.4.). Several reasons can be

given why learners should attempt to reduce their lexical system. Particular lexemes may be difficult to pronounce (Blum/Levenston 1978b:10), they may belong to irregular or infrequent declensional morphological classes (ibid.), or they may impose morphological, syntactic or lexical restrictions on the context which the learner finds difficult to observe. Reasons for lexical reduction can also be found outside the IL system, as eg suggested by Blum and Levenston that learners will avoid using words for which no direct translation-equivalent exists in their L1 (ibid.).

5.4.2 Functional reduction strategies

As can be seen from fig. 14 above, functional reduction strategies are employed by learners who experience problems in the planning phase (due to insufficient linguistic resources) or in the realization phase (retrieval problems), and whose behaviour in the actual situation is one of avoidance, rather than achievement. By adopting a functional reduction strategy the learner "reduces" her communicative goal in order to avoid the problem. Such reduction can attain the character of "global reduction", affecting the global goals (cf.5.3.1.), or it can be restricted to one or more local goals ("local reduction"). For obvious reasons, global reduction cannot occur as a result of retrieval problems, which presuppose that both goal and plan have been formed.

Functional reduction may affect any of the three types of elements of the communicative goal (actional, modal, propositional, cf. 5.1.). Reduction of actional or modal components will be dealt with in 5.4.2.1., reduction of the propositional content in 5.4.2.2.

5.4.2.1 Actional and/or modal reduction

Learners may experience problems in performing specific speech acts and/or in marking their utterances appropriately for politeness/social distance ("speech act modality"). Reduction of speech act modality has been discussed in some detail by Kasper (1979a), who gives examples of how German learners of English reduce their IL performance with respect to politeness marking (see also Nold (1978) and Kasper (1980) for a more extensive discussion of this and related types of reduction). Examples of speech act reduction can be seen in the PIF corpus of learner language (Færch 1979b, 1980b), in which learners in conversations with native speakers often do not use initiating acts.

"Global" reduction of actional features of communicative goals is a predictable communicative behaviour with learners who have received their foreign language instruction in traditionally taught foreign language classrooms, in which the emphasis is almost exclusively on referential speech acts (cf. Hüllen 1973, Piepho 1974, Wilkins 1976, Kasper 1979a). When faced with communicative tasks which demand other types of speech acts, such as the argumentative

or the directive functions, the learner may experience severe problems in performing these and either avoid engaging in communication in situations which are likely to necessitate the use of such functions ("communication avoidance", cf. 5.2.1.) or abstain from using them in communication no matter how relevant they appear as seen from a L1 perspective. If the learner chooses to reduce her goal globally with respect to the actional and/or modal component, the result may be that she conveys a distorted picture of her personality, as observed by Harder (1980).

5.4.2.2 Reduction of the propositional content

Functional reduction of the propositional content comprises strategies such as "topic avoidance", "message abandonment" and "meaning replacement" (or "semantic avoidance").

Topic avoidance (Tarone/Frauenfelder/Selinker 1976, Tarone/Cohen/Dumas 1976, Tarone 1977, Corder 1978b) refers to the strategy of avoiding formulating goals which include topics that are perceived as problematic from a linguistic point of view. Topic avoidance is used exclusively in connection with problems in the planning phase, as opposed to message abandonment (Tarone/Cohen/Dumas 1976, Tarone 1977, Corder 1978b), which can also be used in connection with a retrieval problem in the realization phase. Message abandonment is defined by Tarone/Cohen/Dumas in the following way: "communication on a topic is initiated but then cut short because the learner runs into difficulty with a target language form or rule. The learner stops in mid-sentence, with no appeal to authority to help finish the utterance" (1976:84).

Both topic avoidance and message abandonment result in the learner giving up referring to a specific topic. This is not the case with meaning replacement (Váradi 1973), termed "semantic avoidance" by Tarone/Frauenfelder/Selinker (1976), Tarone/Cohen/Dumas 1976, Blum/Levenston (1978a), Corder 1978b. Here the learner, when confronted by a planning or retrieval problem, operates within the intended propositional content and preserves the "topic" but refers to this by means of a more general expression. The result of meaning replacement is a certain amount of vagueness.

The distinction between "topic avoidance" and "meaning replacement" is as arbitrary as the distinction between what constitutes concepts belonging to one and the same topic and concepts belonging to different topics. Rather than visualize the propositional reduction strategies (apart from message abandonment) as falling neatly into one of two classes, one should see them as forming a continuum. At the one end, the learner says "almost" what she wants to say about a given topic (= meaning replacement), at the other end she says nothing at all about this (= topic avoidance).

5.4.3 Achievement strategies

By using an achievement strategy, the learner attempts to solve problems in communication by expanding her communicative resources (cf. Corder 1978a:84), rather than by reducing her communicative goal (functional reduction). Most of the strategies we shall discuss relate to problems in the planning phase (5.4.3.1., 5.4.3.2.), some to retrieval problems in the realization phase (5.4.3.3.), and one ("restructuring", 5.4.3.2.4.) to problems in both the planning and the realization phase. Of the problems in the planning phase, we shall distinguish between discourse problems (5.4.3.1.) and problems with respect to the linguistic code (5.4.3.2.).

5.4.3.1 Problems in discourse

A number of studies have provided lists of English discourse features which are supposedly relevant for learners (Beneke 1975, Keller/Taba Warner 1976, Edmondson 1977). That learners do in fact have difficulties in organizing discourse has been demonstrated by Götz (1978) and Kasper (1979b), who found that the following represented problems for advanced German learners of English: realising moves in opening phases; signalling change of topic and end of exchange; identifying the interlocutor's preclosing signals; using uptakers and devices for getting the floor. Nold (1978) investigated how German learners of English coped with various discourse phenomena and found that they to a large extent used structures with which they were familiar from German. However, this finding should be compared to that presented in Edmondson/House/Kasper/McKeown (1977) and Kasper (1979a), in which it is demonstrated that learners do not always make use of their L1 when confronted by difficulties in L2, not even in those situations where L1 and L2 are comparable in this respect.

It is difficult to tell whether learners are aware of their having problems in discourse structures. However, the fact that this may not normally be the case does not imply that learners cannot be made conscious about it, a fact which at least suggests that there could be room for communication strategies as defined in the present article within the area of discourse.

5.4.3.2 Linguistic code problems - compensatory strategies

We shall refer to achievement strategies aimed at solving problems in the planning phase due to insufficient linguistic resources as compensatory strategies. The compensatory strategies will be subclassified according to what resources the learner draws on in trying to solve her planning problem: a different code ("code switching", 5.4.3.2.1., "interlingual transfer", 5.4.3.2.2.), a different code and the IL code simultaneously ("inter-/intralingual transfer", 5.4.3.2.3.), the IL code exclusively ("generalization", "paraphrase" etc., 5.4.3.2.4.), discourse phenomena (eg appeals, 5.4.2.3.5), and non-linguistic communication ("mime" etc., 5.4.3.2.6.).

5.4.3.2.1 Code switching

In communication in which foreign languages are involved, there always exists the possibility of switching from L2 to either L1 or another foreign language. The extent to which this is done depends on the interactants' analysis of the communicative situation (cf. 5.2.3.). Thus in the foreign language classroom, learners frequently share the L1 with their teacher, which enables them to code switch extensively between L2 and L1.

Code switching (or "language switch", Tarone/Cohen/Dumas 1976, Tarone 1977, Blum/Levenston 1978a, Corder 1978a,b) may involve varying stretches of discourse from single words up to complete turns. When code switching only affects single words, as in example (1), the strategy is sometimes referred to as "borrowing" (Corder 1978a,b).

(1) do you want to have some eh - Zinsen or do you want to have some more ...

[80 [15]]

5.4.3.2.2. Interlingual transfer

Whereas with the code switching strategy learners ignore the IL code, strategies of interlingual transfer result in a combination of linguistic features from the IL and the L1 (or other languages different from the L2 in question). As described in Tarone/Cohen/Dumas 1976, interlingual transfer (termed "transfer from NL") may involve the transfer of phonological, morphological, syntactic or lexical features to the IL.

If a lexical item is adjusted to IL phonology and/or morphology (cf. example (2) below), the strategy of interlingual transfer is sometimes referred to as "foreignizing" (Ickenroth 1975), whereas adjustment at the lexical level of the IL system (eg translating compounds or idiomatic expressions from L1 verbatim into L2, cf. example (3) below) is described as "literal translation" (Tarone 1977).

(2) Native speaker: how do you go to school [...]

Learner: [...] sometimes I take my er - er what's it called - er [...] "knallert" [knælə] -

[PIF, "knallert" Danish for "moped"]

(3) they [my pets] eats - erm greens - things

[PIF, "greens things" = Danish "grøntsager" = 'vegetables']

5.4.3.2.3 Inter-/intralingual transfer

Especially in situations in which the learner considers the L2 formally similar to her L1, strategies of inter-/intralingual transfer may be applied. The result of the strategy is a generalization of an IL rule (see below 5.4.3.2.4.), but the generalization is influenced by the properties of the corresponding L1 structures (cf. Jordens 1977, Kellerman 1977, 1978). Thus Danish learners of English might generalize the regular -ed suffix to irregular verbs on the basis of the way verbs in Danish are distributed between the regular and the irregular declensional classes (eg Danish svømme - svømmede (past tense), English swim - *swimmed).

5.4.3.2.4 IL based strategies

The learner has various possibilities for coping with communicative problems by using her IL system: she may (i) generalize; (ii) paraphrase; (iii) coin new words. As a special type of IL based strategies we include (iv) restructuring.

(i) Generalization

By generalization learners solve problems in the planning phase by filling the "gaps" in their plans with IL items which they would not normally use in such contexts. As seen from a L2 perspective, the strategy resembles overgeneralization of a L2 item as it results in the extension of an item to an inappropriate context. However, this is not necessarily the case for the learner, who may not yet know the appropriate context for the relevant item, in which case she can hardly be said to overgeneralize. An obvious exception to this is generalization as an achievement strategy to compensate for formal reduction (cf. 5.4.1.): as the learner "knows" the most appropriate item but decides to avoid using it (formal reduction) she clearly overgeneralizes in using an alternative - and less appropriate - item.

Our usage of the term overgeneralization is obviously more restricted than that normally found in the literature on communication strategies (see eg Tarone/Frauenfelder/Selinker 1976, Tarone/Cohen/Dumas 1976), as the normal usage conflates an IL with a L2 perspective and characterises violation of restrictions which hold on rules in L2 as instances of overgeneralization.

Generalization differs from the functional reduction strategy of meaning replacement (cf. 5.4.2.2.) in that the learner, when generalizing, does not change her communicative goal: the learner assumes that her "original" goal can be reached by using a generalized IL item or, in other words, that the generalized item can convey the appropriate meaning in the given situation/context. Whether "lexical substitution" (Tarone/Frauenfelder/Selinker 1976), "approximation" (Tarone/Cohen/Dumas 1976, Tarone 1977), the use of superordinate terms (Ickenroth 1975, Blum/Levenston 1978a) etc. are

instances of generalization strategies or of functional reduction strategies is difficult to tell from the rather vague definitions these terms have normally been given in the quoted literature. Cf. the following: " ... lexical substitution - using a word in the target language which does not communicate exactly the concept which the learner desires, but which shares enough semantic elements in common with the desired concept to satisfy the learner." (Tarone/ Frauenfelder/Selinker 1976:127). If this can be taken to mean that the learner, in using a lexical substitute to fill a gap in her vocabulary, believes that the substitute will convey her intended meaning, this implies that the learner's underlying behaviour is achievement, rather than reduction, and that lexical substitution is a generalization strategy. (That the effect of lexical substitution may be that the intended meaning does not get across to the interlocutor is irrelevant in the context of the present article in which we take the learner's, and not her interlocutor's or the analyst's, point of view, cf. 2.1.).

As an instance of generalization we include the following example, in which the learner uses the superordinate term "animals" to refer to her rabbit

(4) Native speaker: do you have any animals -

Learner: (laugh) yes - er - er that is er - I don't know how I shall say that in English -

[···]

Native speaker: I think they must be rabbits -

Learner: er what

Native speaker: rabbits -

Learner: rabbits -

Native speaker: yer rabbits

[···]

Native speaker: does it - sleep on - in your room

Learner: er my - my animals -

Native speaker: mm your animal

[PIF]

(ii) Paraphrase

By using a paraphrase strategy, the learner solves a problem in the planning phase by filling the 'gap' in her plan with a construction which is well-formed according to her IL system (cf. Tarone 1977:198 for a related definition of paraphrase). Paraphrases can have the form of descriptions or circumlocutions (Váradi 1973, Tarone 1977), the learner focussing on characteristic properties or functions of the intended referent. Thus in ex.1 the learner describes 'interest' as "have some more money". In the following example, the learner tries to explain 'moped'.

(5) Learner: [...] some people have a car - and some people have a er bicycle - and some people have a er - erm - a cykel there is a m motor

Native speaker: oh a bicycle - with a motor

[PIF]

As a special type of description can be mentioned the use of a converse term + negation, as discussed in Blum/Levenston 1977.

Paraphrase can also be exemplifications, the learner using a hyponymic expression instead of the (missing) superordinate term. The learner who tried to communicatie 'moped' by means of a description (example 5) earlier used exemplification, without success (example 6).

(6) Learner: er (laugh) knallert - ['knala] - er (laugh) [...] you know er Puch

[PIF, "knallert" Danish for 'moped'; "Puch" a make of moped]

(iii) Word-coinage

As the term says, a word-coinage strategy involves the learner in a creative construction of a new IL word (cf. Váradi's "airball" for 'balloon'). In the following example, the learner wants to refer to the curve of a stadium.

(7) we were sitting in the - rounding of the station and [...]

[BO]

(iv) Restructuring

A restructuring strategy is used whenever the learner realizes that she cannot complete a local plan which she has already begun realizing and develops an alternative local plan which enables her

to communicate her intended message without reduction (cf. "message abandonment", 5.4.2.2., which can be considered the reductional parallel to restructuring). In an example quoted by Albrechtsen/Henriksen/Faerch (1979) the learner gets around the word daughter by restructuring his utterance: " ... my parents has I have er four elder sisters ...". In the following example, the learner wants to express that he is hungry.

(8) my tummy - my tummy is - I have (inaudible) I must eat something

[80]

5.4.3.2.5 Cooperative strategies

As pointed out by Tarone (1979), the interactional aspect of communication is of considerable significance for a discussion of communication strategies. She therefore proposes to broaden the definition of communication strategy "to make it clear that the term relates to a mutual attempt of two interlocutors to agree on a meaning in situations where requisite meaning structures do not seem to be shared"(Tarone 1979). That conversations between learners and native speakers often contain a fair amount of metalinguistic communication is a well-known fact, discussed eg in Glahn 1980. However, we do not find it feasible to broaden our definition of communication strategies in the way suggested by Tarone; although problems in interaction are necessarily "shared" problems and can be solved by joint efforts, they originate in either of the interactants, and it is up to her to decide whether to attempt a solution herself, eg by using a linguistic-based achievement strategy, or to signal her problem to her interlocutor and attempt to get the problem solved on a cooperative basis.

If the individual decides to try to solve her problem herself and she succeeds in communicating her intended meaning to her interlocutor, the interactants clearly do not reach a state of "mutually attempting ... to agree on a meaning". If, however, the individual does not succeed in communicating her intended meaning by using a non-cooperative strategy, this may function as a "problem indication", leading to a cooperative solution.

If the learner decides to signal to her interlocutor that she is experiencing a communicative problem and that she needs assistance, she makes use of the cooperative communication strategy of "appealing" (cf. Tarone/Cohen/Dumas 1976, Tarone/Frauenfelder/Selinker 1976, Tarone 1977, Blum/Levenston 1978a, Corder 1978a,b). Appeals, which can be characterized in ethnomethodological terms as "self-initiated other-repairs" (Schegloff/Jefferson/Sacks 1977: 363ff.), can be direct (cf. example 9), or indirect. In the latter case ("admission of ignorance", Palmberg 1979), the learner often supplements the (indirect) appeal by another communication strategy, as seen in example 10.

(9) Native speaker: what er colour is it -

Learner: er skin (laugh) er - er - what's - colour is this - (points to her sweater)

[PIF]

(10) after my school I'll start erm (aigh) er - I learn erm shirts and er (laugh) can't explain that - er - ay - [øyi] I I can't say that

[PIF, "øy" Danish for 'new']

As mentioned above, an unsuccessful non-cooperative strategy may function as a "problem indication". In this case the strategy has the same function as an appeal, though this is unintended by the learner.

In communicative situations with well-defined communicative goals (eg problem-solving activities), and in which one of the interactants has a less elaborated linguistic system than the other(s), the interactants may change the distribution of roles in such a way that the communicative task is reduced for the linguistically "handicapped" interactant (J.Wagner 1979). This can be characterized as a "global" strategy, affecting the overall organization of discourse.

5.4.3.2.6 Non-linguistic strategies

In face-to-face communication, learners frequently resort to non-linguistic strategies such as mime, gesture and sound-imitation (cf. Tarone 1977, Corder 1978a,b). Although non-linguistic strategies are sometimes used as the learner's one and only attempt at solving a communicative problem they are often used to "support" other - verbal - strategies. An important function of non-linguistic strategies is to signal an appeal to the interlocutor.

5.4.3.3 Retrieval problems

In realizing a plan, learners may have difficulties in retrieving specific IL items (see above, 5.3.2.), and may adopt achievement strategies in order to get at the problematic item. This phenomenon has been studied by Glahn, who concludes that the learners who participated in the task "immediately realized whether they did or did not possess a term in French", and that in some cases they "knew that the term was there", and they would have to retrieve it in some way" (1978). The following six retrieval strategies were identified in the experiment: waiting for the term to appear; appealing to formal similarity; retrieval via semantic fields; searching via other languages; retrieval from learning situations; sensory procedures.

5.4.4 Overview of communication strategies used in speech production

Formal reduction strategies:	Subtypes:
Learner communicates by means of a "reduced" system, in order to avoid producing non-fluent or incorrect utterances by realizing insufficiently automatized or hypothetical rules/items	phonological morphological syntactic lexical
Functional reduction strategies:	**Subtypes:**
Learner reduces her communicative goal in order to avoid a problem	actional and/or modal reduction reduction of the propositional content: topic avoidance message abandonment meaning replacement
Achievement strategies:	**Subtypes:**
Learner attempts to solve communicative problem by expending her communicative resources	strategies aimed at solving discourse problems strategies aimed at solving linguistic code problems: code switching (incl."borrowing") interlingual transfer (incl."foreignizing" and "literal translation") inter-/intralingual transfer IL based strategies: generalization paraphrase word-coinage restructuring cooperative strategies (incl. appeals) non-linguistic strategies: mime gesture sound-imitation strategies aimed at solving retrieval problems: waiting for the term to appear appealing to formal similarity retrieval via semantic fields searching via other languages retrieval from learning situations sensory procedures

5.5 Receptive communication strategies

The model of intellectual behaviour which was established in 3.2. can be used for characterizing strategies adopted by the learner for solving problems in decoding L2 utterances. As is the case with the learning strategies, we can draw a distinction between psycholinguistic and behavioural receptive strategies. Psycholinguistic receptive strategies are illustrated by fig.15, behavioural receptive strategies by fig.16.

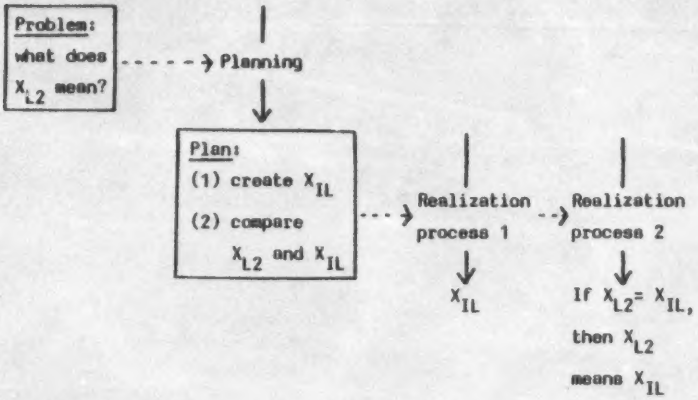

Fig.15: Psycholinguistic receptive strategies

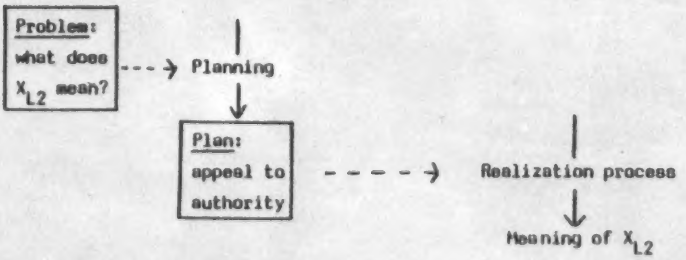

Fig.16: Behavioural receptive strategies

As psycholinguistic receptive strategies can be used those of the productive achievement strategies which make use of prior linguistic knowledge related to the IL: interlingual transfer (5.4.3.2.2.), inter-/intralingual transfer (5.4.3.2.2.), and the IL based strategies of generalization and word coinage (5.4.3.2.4. (i) and (iii)). Making use of prior linguistic knowledge and comparing this with input resembles the learning strategy of inferencing (cf. 4.4.2.2.), and "inferencing" has been mentioned in the literature as a receptive strategy (Bialystok/Fröhlich 1977, Bialystok 1978, 1979b). If the learner resorts to explicit IL knowledge in order to solve a receptive problem, the strategy resembles the process of monitoring in speech production. This would be the case if the learner had to run through an internalized paradigm mentally in order to interpret a particular morpheme.

The last-mentioned type of receptive strategy resembles the behavioural receptive strategies in being appeals to authority - in the case of the psycholinguistic strategies, appeals to an internalized authority. In interaction between an IL user and a native speaker there is ample room for adopting the behavioural receptive strategy of appeal to authority, either as a direct appeal (example 11) or as an indirect appeal (example 12). These can be seen as the receptive parallels to the self-initiated other-repairs discussed in connection with cooperative strategies (5.4.3.2.5.).

(11) Native speaker: do they have a a white - a white tail -

Learner: tail - what is tail -

[PIF]

(12) Native speaker: do you - make clothes in your spare time -

mm

Learner: spare time -

Native speaker: well in your time when you're not at school at the week-ends - in the evenings

[PIF]

The learner may also appeal for confirmation that her interpretation is correct, as in example 13.

(13) Native speaker: do you smoke a lot - -

Learner: - - a lot - very much -

[PIF]

6. L2 learning and communication strategies

As mentioned in 2.2., learning often takes place through communication, in particular in informal L2 learning contexts. For this reason it can sometimes be difficult to draw a hard and fast distinction between learning and communication strategies in actual communicative situations. In the present chapter we discuss how communication strategies can lead to learning, and we try to classify the communication strategies listed in 5 according to whether they are likely to have a learning effect or not.

In 4.1. we drew a distinction between rule formation and automatization, and in 4.3.2. we went into a further categorization of rule formation into hypothesis formation and hypothesis testing. As the use of a communication strategy presupposes that the learner experiences a problem, this implies either that her IL system does not as yet contain the appropriate item/rule (planning problem), or that the appropriate IL item/rule is difficult to retrieve or is considered problematic from a correctness or fluency point of view (realization problem). We can therefore conclude that communication strategies which aim at solving problems (productive or receptive) in the planning phase can lead to L2 learning only with respect to hypothesis formation, and that communication strategies in connection with the realization phase will be associated with automatization only.

A basic condition for communication strategies to have a potential learning effect is that they are governed by achievement, rather than avoidance, behaviour: If learners avoid developing a plan and change the goal instead so that this can be reached by means of the communicative resources she already possesses in her IL, no hypothesis formation takes place and her IL system remains unaffected (although the automatization of the system may hereby be increased in general due to practice). Similarly, if learners avoid using a particular IL item because of uncertainty about its correctness (formal reduction), this clearly does not lead to automatization of the relevent item (but again, possibly, to a consolidation of some other aspect of the system).

The difference between productive and receptive communication strategies with respect to hypothesis formation mirrors the difference established in 4.4. between inferencing and non-inferencing transfer (4.4.2.2.): In using a productive communication strategy, the learner relies exclusively on prior knowledge and experience, whereas the learner, when trying to cope with a receptive problem, relates her prior knowledge to intake. Within each of the two types of communication strategies (productive/receptive), one can again identify strategies which resemble the psycholinguistic learning strategies (all productive achievement strategies except the cooperative strategies (5.4.3.2.5.) in addition to the psycholinguistic receptive strategies (5.5.)), and strategies that are related to the behavioural learning strategies (productive and receptive appeals, 5.4.3.2.5., 5.5.).

As regards automatization, the retrieval strategies mentioned in 5.4.3.3. have a clear potential learning effect: if learners attempt to retrieve an IL item and succeed it may be easier to make use of the item on future occasions. The receptive strategy of consulting an internalized reference grammar ("monitoring", 5.5.) can also be assumed to have a potential positive effect on automatization. Finally, it should be pointed out that to the extent strategies involve the learner in using other aspects of the IL system than what is considered problematic, this can also be assumed to contribute indirectly to automatization of the system in general, as pointed out above.

Fig.17 contains a summary of the potential learning effect of communication strategies.

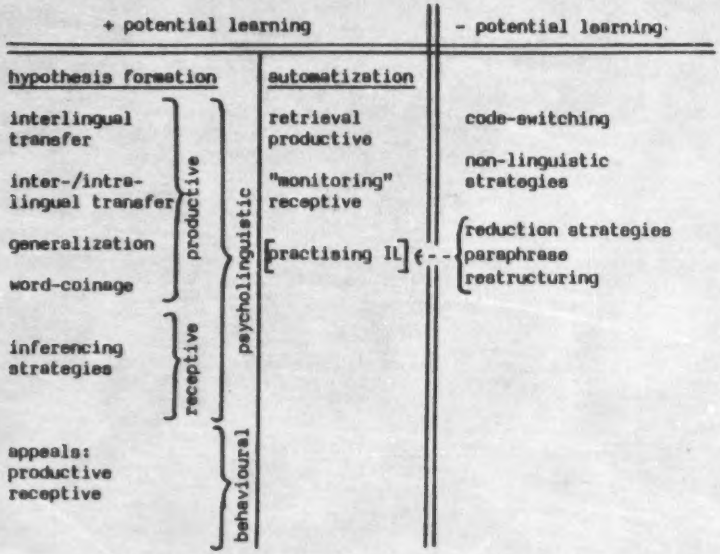

Fig.17: Potential learning effect of communication strategies

7. Summary and conclusion

7.1 Summary

The approach we adopt in the present article can be characterized with respect to three types of problems in IL studies: the choice of perspective, the relationship between learning and communication, and the ontological status of classes of IL phenomena. Our description of processes and strategies is based on the learner's, and not the analyst's, point of view. We maintain a distinction between processes/strategies in learning and in communication. And we assume that strategies do not constitute a 'natural' class of phenomena, given a priori, but rather that the class of strategies has to be established by means of defining criteria based on the Erkenntnisinteresse of the analyst.

Central to our description of processes and strategies is a general model of goal-related intellectual behaviour. Within this model, strategies constitute a subclass of plans and are defined by means of two criteria: problem-orientedness and consciousness. Both of these are based on our interest in questions of FL learning and teaching and have a clear relevance for motivational and methodological aspects of FL teaching. The criterion of problem-orientedness implies that the learner is having a problem in reaching a particular learning or communicative goal, the criterion of consciousness implies that the learner is consciously aware of her having such a problem. Hence consciousness refers to the problem, and not to the plan which the learner adopts in order to cope with her problem. Strategies can consequently be defined as potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular goal.

Learners may attempt to solve their problems in L2 learning by means of psycholinguistic or behavioural learning strategies. Psycholinguistic strategies are adopted if the learning problem is a problem in hypothesis formation, behavioural strategies if the problem is a problem in hypothesis testing or in increasing automatization. The psycholinguistic strategies can be subclassified on the basis of whether/how the learner makes use of prior knowledge in hypothesis formation. In this way a distinction can be made between the psycholinguistic strategies of induction, inferencing, and transfer.

Communication strategies are used in order to solve problems in either the planning or the realization of speech production. Strategies used in speech reception constitute a special class and have been discussed separately. Planning problems can be caused by (1) lack of linguistic resources (2) uncertainty about the correctness of rules/items belonging to the IL system (3) expectation of fluency problems in connection with the realization of specific rules/items. Realization problems are problems in retrieving the phonological/orthographical forms of items which have been selected for the plan.

Communication strategies can be subclassified into formal reduction, functional reduction and achievement strategies, each of which classes contains a range of specific strategies (cf. 5.4.4.) In addition to their communicative function, several of these strategies can have a subsidiary learning effect, contributing to either hypothesis formation or to automatization.

7.2 Discussion

By adopting problem-orientedness, rather than consciousness, as the primary defining criterion of strategies we avoid basing our definition directly on a concept of rather problematic status. This, however, does not imply that the issue of consciousness is of relatively minor importance in connection with a discussion of strategies in FL learning and communication: it is difficult to imagine how methods of handling learning and communication strategies in the FL classroom can be developed before we know more about the relationship between (types of) consciousness, learner variables and learning/communication.

In our discussion of L2 learning we have pointed out that it can be difficult to apply the defining criteria of strategies to learning plans as it is unclear to what extent psycholinguistic and behavioural activity leading to L2 learning can be seen as the result of the learner being aware of specific learning problems. We here touch upon something which we have not considered in the article: the role of learning plans and strategies in the FL classroom. It is a question of teaching methods whether teachers make learners aware of specific learning problems, rather than try to teach the learners the relevant L2 item directly. In the former case, L2 learning may proceed by means of learning strategies employed by the learner. In the latter case, it is the teacher who devises a teaching strategy - learning takes place in the learner by means of a non-strategic plan established by the teacher. Hopefully, future research in this area will reveal to what extent learners can be made conscious about problems within the different phases of L2 learning (hypothesis formation, hypothesis testing, automatization), and to what extent learning strategies (as used by the learners) can be utilized in the FL classroom.

Because of the specificity of IL communication, as compared to communication in L1, there is less difficulty in applying the defining criteria to IL communication than to L2 learning. However, there exist some real problems for the IL analyst in applying the defining criteria to data: it is not necessarily the case that the defining criteria leave any traces in the learner's IL performance which can be used by the analyst as "strategy markers" (cf. Færch/Kasper 1980).

By adopting the learner's and not the analyst's or the L2 speaker's perspective we have to exclude a number of phenomena from the class of communication strategies which have been referred to in the literature as strategies. This is eg the case with 'prefabs' (Tarone/Cohen/Dumas 1976:80), 'overelaboration' (Tarone/Cohen/Dumas 1976:81), and 'simplification' (Widdowson 1977:12), none of which can be seen as plans devised by learners in order to solve problems in planning or realizing IL communication.

One aspect of communication strategies which it has not been possible to discuss in the present article is the sequencing of strategies in communication: learners often have to try out a number of different strategies before they succeed in reaching their communicative goal. Thus the learner who produced the data contained in examples 2,5,6 adopted the following sequence of strategies in order to communicate 'moped':

language switch + generalization:	cykel (= 'bicycle')
language switch:	knallert (= 'moped')
interlingual transfer:	['knælə']
paraphrase: exemplification	Puch
paraphrase: circumlocution	some people have a car ... (cf. example 5)

A similar type of sequence, moving from L1 based to L2 based strategies, is often seen in data produced by elementary and intermediate learners within the PIF corpus. One possible explanation of this is that the learners who are normally taught by English teachers whose native language is Danish are used to "looking up the word" they need in the teacher by giving it in Danish in the classroom. This procedure may be efficient as seen within a learning perspective, whereas it is highly questionable whether it contributes to the learner's communicative competence in any positive way. One might indeed argue that if learners are encouraged to use L1 based strategies in the classroom this gives them the faulty impression that they can do the same in communicative situations with speakers whose L1 is different from their own. This points forward to our last topic: the relationship between learning and communication processes/strategies and FL teaching.

7.3 Some implications for FL teaching

One important aspect of communicative competence is situational and intentional appropriacy, not to be understood in the stylistic sense of 'decorum' only but also in the sense of choosing the most efficient means of reaching one's communicative goal in a given communicative situation. If learners are not made aware of the fact that different communicative situations may call for different solutions to problems but exclusively transfer their classroom-based

communicative behaviour to other types of communicative situation (cf. the example of sequencing in 7.2.), they are likely to produce more or less inappropriate utterances outside the classroom. It is important for learners to become aware of the significance of 'Einschätzung' - not just with respect to communication strategies but also with respect to other aspects of communication. But before we can give precise directions to learners about the use of communication strategies we need further studies of the communicative effect of different types of strategies relative to different types of communicative situations.

There also exists a need for investigations into the relationship between different learning strategies and different learning situations (eg formal/informal situations, different types of informal situations), and between different learning strategies and different 'distances' between L1 and L2 as perceived by the learner (cf. Kellerman 1978). On the basis of such investigations it should be possible not only to assess the potential learning effect of the different types of learning strategies but also to suggest how learning strategies should be utilized in the FL classroom.

Ignoring the fact that there are many unresolved questions concerning the potential function of learning and communication strategies within a FL context, we might venture to consider the general question whether learning and communication strategies should be taught. If by teaching we mean passing on new information only there is probably no need to "teach" strategies: FL learners no doubt have implicit knowledge about both learning and communication strategies and make use of this. But if by teaching we also mean making learners conscious about aspects of their (already existing) behaviour it is obvious that we should teach them about strategies, in particular how to use learning and communication strategies most appropriately. Before we can do so, however, we need more information about the potential effect of different types of strategies, as mentioned above. Furthermore, the choice of teaching methods will have to take into consideration what the relationship is between learner variables and learners' preference for strategies (cf. the two basic types of underlying behaviour: achievement and avoidance, 5.3.3.), as well as the relationship between learners' preference for strategies and teaching goals/methods. Thus one might imagine that learners would be induced to opt for reduction strategies if the FL teaching gives high priority to correctness and possibly penalizes errors against the L2 norm, even if these are a result of achievement strategies.

Would it be feasible to have learners engage in communicative situations in the classroom which require a more extensive knowledge of L2 than what the learners can be expected to have? On the one hand, there is a risk of frustrating the learners by making too strong demands on their ability to communicate. On the other

hand, there could be considerable gains in teaching learners how to compensate for insufficient linguistic resources by using the totality of their communicative resources creatively and appropriately.

With the last-mentioned question we reach a topic which has been extensively discussed in recent years: syllabus design, pros and cons of a notional/functional syllabus as compared to a 'traditional' structural syllabus. Basic to a notional/functional approach is the attempt to establish syllabuses which are geared towards very specific communicative needs, something which is neither realistic nor desirable in connection with courses like most FL courses offered within school programmes. In connection with such courses, communication strategies can be seen as devices which enable learners to bridge the inevitable gap between classroom interaction and specific, authentic communicative situations, hereby increasing their communicative competence in a way which is specific for IL communication. Parallel to this, learning strategies are what will enable learners to develop a specific linguistic competence relative to those types of communicative situations in which they need their FL outside the classroom. In other words, by learning how to use learning and communication strategies appropriately, learners will be more able to bridge the gap between formal and informal learning situations and between artificial and authentic communicative situations.

Ja mach' nur einen Plan
sei nur ein grosses Licht
und mach' dann noch 'nen zweiten Plan
gehn tun sie beide nicht

Brecht: Dreigroschenoper

NOTES

1. "Wenn also die Sachanalyse des Ausdrucks 'Handlung' eine systematische Analyse dessen liefern soll, was die Aktanten des Alltags darunter verstehen, dann heisst das nicht, dass die Aktanten des Alltags bereits über eine solche systematische Analyse verfügten. Das Gegenteil ist der Fall."

2. This approach is in line with that represented by ethnomethodological studies of conversation, and as expressed in the following quotation: "In the ensuing discussion ... it should be clearly understood that the 'closing problem' we are discussing is proposed as a problem for conversationalists; we are not interested in it as a problem for analysts except in so far, and in the ways, it is a problem for participants." (Schlegloff/Sacks 1973:290).

3. Cf. the phasing of lessons into presentation, explanation, repetition, practice, and transfer, as in the (audio-visual) CREDIF method (Moget 1972:xi ff.), where it is the function of the transfer phase to provide an opportunity for the learner to use the rules and elements learned in the previous phases in communicative tasks.

4. "die ontologische Grundannahme einer vom Erkennenden unabhängigen Struktur der Welt" (1968:150); "... (der) Objektivismus der Wissenschaften (, denen) die Welt gegenständlich als ein Universum von Tatsachen (erscheint), dessen gesetzmässiger Zusammenhang deskriptiv erfasst werden kann" (151). "Methodische Grundsatzentscheidungen ... haben diesen eigentümlichen Charakter, weder willkürlich noch zwingend zu sein. Sie erweisen sich als angemessen oder verfehlt" (161).

5. " ... dynamische Aufeinanderfolge von verschiedenen Zuständen eines Dinges bzw. Systems".

6. "das Programm [=Plan] ist ... nichts Gegebenes, Fertiges, sondern ein Prozess, der Prozess der Programmierung".

7. Cf. "The planning process only takes place whenever the language user does not reach her actional goal automatically and as a matter of cause." ("Die Planbildung findet nur dann statt, wenn der Aktant nicht automatisch und selbstverständlich zum Ziel seiner Handlung kommt.") (Rehbein 1977:147).

8. "Wissen eines Individuums oder einer Menschengruppe darüber, dass das von ihm (ihr) beherrschte Wissen nicht genügt, ein Ziel erreichen zu können und dass dieses Wissen deshalb entsprechend erweitert werden muss".

9. Cf. "What distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labour-process, we get a result that already existed in the imagination of the labourer at his commencement" (Marx 1912: 157). ("Was aber von vornherein den schlechtesten Baumeister vor der besten Biene auszeichnet, ist, dass er die Zelle in seinem Kopf gebaut hat, bevor er sie in Wachs baut. Am Ende des Arbeitsprozesses kommt ein Resultat heraus, das beim Beginn desselben schon in der Vorstellung des Arbeiters, also schon ideell vorhanden war" (1966:193)).

10. "Aktionspläne oder Strategien sind Ausdruck der spezifisch menschlichen Fähigkeit zur geistigen Vorwegnahme des Ergebnisses einer Tätigkeit und des bewussten planmässigen Handelns zur Erreichung eines Ziels" (1975:285).

11. Cf. "By communication strategy we understand a plan devised for the optimal realization of a communicative intention, which, in taking account of the objective and subjective factors and the conditions of the communication process, determines the internal and external structure of a text, and from which the use of linguistic means of expression derives." ("Wir verstehen unter Kommunikationsstrategie einen Plan zur optimalen Realisierung einer Kommunikationsabsicht, der unter Berücksichtigung der objektiven und subjektiven Faktoren und Bedingungen des Kommunikationsvorgangs die innere und äussere Struktur eines Textes festlegt und von dem sich die Verwendung der sprachlichen Gestaltungsmittel ableitet." (1975:285).

12. "The speaker's strategy is a behavioural plan for linguistic actions embedded in the speech situation ... according to which the current speaker, in continous feedback with the entire speech components, selects a combination of linguistic means and speech acts which is most efficient within a medium-term perspective." ("Die Sprecherstrategie ist ein in der Sprechsituation ... verankerter/eingebetteter Verhaltensplan für Sprachhandlungen, nach dem der jeweilige Sprecher in ständiger Rückkoppelung zu sämtlichen Sprechkomponenten die mittelfristig wirkungsvollste Sprachmittel-/Sprechakt-Kombination wählt") (1977:137).

13. For an attempt at establishing a methodological hierarchy, leading to FL internalization and automatization, cf. the discussion of applications of Gal'perin's theory of learning to FL teaching in Baur/Rehbein (1979).

14. See also J.James (1977:11), who makes a similar point. A rather different specification of overgeneralization is given by Kielhöfer/Börner, who characterize it as a "strategy of discrimination ("eine Strategie der Diskriminierung") (1979:121).

15. The data used to illustrate communication strategies in the present article originate from two sources: (1) the project "Kommunikative Kompetenz als realisierbares Lernziel", Seminar für Sprachlehrforschung, Ruhr-Universität Bochum (BO), (2) the PIF project, Department of English, University of Copenhagen (PIF). For descriptions of the two corpora of learner language, cf. Edmondson/House/Kasper/McKeown (1977) for the BO data and Færch (1980b) for the PIF data.

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